**STOPPING WATER POLLUTION AT ITS SOURCE**

# THE PRELIMINARY REPORT ON THE SECOND SIX MONTHS OF PROCESS EFFLUENT MONITORING IN THE MISA PULP AND PAPER SECTOR

(July 1, 1990 to December 31, 1990)

Environment Ontario

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(July 1, 1990 to December 31, 1990)

Report prepared by:
Water Resources Branch
Ontario Ministry of the Environment

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## INTRODUCTION

The Municipal/Industrial Strategy for Abatement (MISA) program is a regulatory program designed to reduce water pollution from industrial and municipal dischargers in Ontario. The ultimate goal of the MISA program is the virtual elimination of persistent toxic contaminants from all discharges to Ontario waterways.

MISA Effluent monitoring regulations have been promulgated for nine industrial sectors. The Effluent Monitoring Regulations require direct dischargers to monitor the types, concentrations and total amounts of toxic substances present in their effluent.

This report is a preliminary report on the second six months of process effluent monitoring data for the MISA Pulp and Paper Sector. A final report will be prepared on the entire twelve months of effluent monitoring data once the data has been reviewed for quality assurance/quality control.

## I. BACKGROUND

There are twenty seven (27) pulp and paper mills located in the Province of Ontario that discharge effluent directly to surface watercourses. These mills have completed one year of effluent monitoring under the MISA (Municipal Industrial Strategy for Abatement) program.

An Effluent Monitoring Regulation for the MISA Pulp and Paper Sector was promulgated on July 21, 1989. Under the Regulation, each pulp and paper mill was required to monitor its effluent for a one year period starting on January 1, 1990.

For the purposes of the effluent monitoring regulation, the twenty seven pulp and paper mills have been divided into four subcategories - sulphate (kraft), sulphite-mechanical, corrugating and deinking-board-fine papers-tissue.

There are nine mills in the sulphate (kraft) subcategory, eight mills in the sulphite-mechanical subcategory, two mills in the corrugating subcategory and the remaining mills are in the deinking-board-fine papers-tissue subcategory (see Appendix A). Pulp and paper mills were placed into a particular subcategory depending on the manufacturing processes used at the mill.

Note:

The Development Document for the Effluent Monitoring Regulation for the MISA Pulp and Paper Sector (Ontario Ministry of the Environment, July 1989) outlines the technical rationale behind the development of the MISA Pulp and Paper Sector Effluent Monitoring Regulation. The Development Document provides background information on the different options that were considered in determining the monitoring approach to be used for mills in the MISA Pulp and Paper Sector. Background information is also provided on the technical rationale used to select the parameters to be monitored and their frequency of monitoring.

## II. PRESENT STATUS OF EFFLUENT MONITORING

The MISA Pulp and Paper Sector completed its twelfth and final month of effluent monitoring under the Effluent Monitoring Regulation on December 31, 1990. Data validation has now been completed for the second six months of process effluent monitoring data.

## III. QUANTITY OF ANALYTICAL DATA

The second six months of effluent monitoring data for the MISA Pulp and Paper Sector contains 97,425 data points. Approximately sixty-one percent of these data points are for process effluent streams (see table below).

| Data Point Type | Number of Data Points |
|---|---|
| Process Effluent | 59,430 |
| Cooling Water | 2,477 |
| Backwash Effluent | 95 |
| Stormwater | 1,788 |
| Waste Disposal Site Effluent | 194 |
| Emergency Overflow Effluent | 873 |
| Quality Assurance/Quality Control | 32,568 |
| Total | 97,425 |

Note:

Data provided in this report reflects the Ministry database as of May 31, 1991.

## IV. THE PRELIMINARY REPORT ON THE SECOND SIX MONTHS OF PROCESS EFFLUENT MONITORING IN THE MISA PULP AND PAPER SECTOR

This preliminary report presents the second six months of process effluent monitoring data for the MISA Pulp and Paper Sector. A final report based on the entire twelve months of process effluent monitoring data will be published in the Development Document for the Effluent Limits Regulation for the MISA Pulp and Paper Sector. This report will also include cooling water, backwash effluent, stormwater, waste disposal site effluent, emergency overflow effluent and quality assurance/quality control data.

It should be noted that any interpretations of the results reported at this stage can only be considered as "preliminary" in nature.

In order to expedite the reporting of MISA effluent monitoring data, the following assumptions have been made for the preparation of this report:

1. All analytical results with remark codes "<DL", "<T", "<W" and "<WE" are assigned the value of zero (0) i.e. non detected (approximately 26% of the data). Remark codes are listed in Appendix B of this Report.

2. All analytical results with remark codes "<", ">", "A" or analytical results that do not have a remark code are included in the results presented in this report.

3. All other data with remark codes different than the ones mentioned above are not included in the data used to prepare this report because the results are questionable (approximately 1.8% of the data).

4. Quality assurance/quality control data and audit data are not considered in this review of the data.

5. Monthly average concentrations are calculated as the arithmetic mean of the daily concentrations.

6. Daily loadings are calculated as the product of daily flow and concentration.

7. **Monthly average loadings are calculated as the arithmetic mean of the daily loadings.**

8. **For pulp and paper mills that have two process effluent streams (i.e. Abitibi-Price Inc., Fort William Division and MacMillan Bloedel), monthly average concentrations are reported for each effluent stream.**

9. **For pulp and paper mills that have two process effluent streams (i.e. Abitibi-Price Inc., Fort William Division and MacMillan Bloedel), monthly average loadings are reported for each mill by calculating the sum of the monthly average loadings for each effluent stream.**

## V. PROCESS EFFLUENT MONITORING DATA

Tables 1.1 to 1.4 list the parameters that have been detected, by process subcategory, in MISA pulp and paper sector process effluent and their frequency of detection and average concentrations. These parameters have been detected above the laboratory method detection limit.

It should be noted that Tables 1.1 to 1.4 list the parameters that have been detected on a process subcategory basis and not on an individual mill basis.

Tables 2.1 to 2.27 list the parameters that have been detected in the process effluent streams at each mill on a mill by mill basis.

Tables 3.1 and 3.2 list the monthly average process effluent flows for the twenty seven pulp and paper mills in the sector. The Kimberly-Clark Canada mill in Huntsville spray irrigates effluent during the summer and only discharges effluent during the colder months of the year. Therefore, only two months of effluent monitoring data (including flow measurement data) are reported for this mill in this report.

Table 4.0 lists the average daily loadings of the parameters that were monitored daily, thrice weekly and weekly. Some of the mills only monitored the parameters ammonia plus ammonium, nitrate and nitrite, total Kjeldahl nitrogen and phosphorus on a

monthly basis. However, for the purposes of comparison, data for these mills have also been included in the table.

The average daily loadings of adsorbable organic halogen (AOX) are listed for those mills that bleach some of their product using chlorine and chlorine derivatives. AOX is a surrogate parameter that is used to measure organochlorine compounds.

Under the effluent monitoring regulation, pulp and paper mills were permitted to monitor for either chemical oxygen demand (COD) or dissolved organic carbon (DOC) on a daily basis. As a result, the average daily loadings of either COD or DOC are listed for each mill.

Also listed in Table 4.0 are the average daily loadings of dichlorodehydroabietic acid and dehydroabietic acid for the nine sulphate (kraft) mills that were required to monitor their process effluents thrice weekly for these parameters. Sulphite-mechanical and corrugating mills were only required to monitor their process effluents for dehydroabietic acid and average daily loadings for this parameter are shown in the Table.

Volatile suspended solids were monitored at mills that have biological treatment systems. Volatile suspended solids were measured in order to determine if there are significant discharges of bio-solids at these mills.

Figures 1.1 to 1.27 show the monthly average concentrations of the daily, thrice weekly and weekly parameters for each mill by parameter and process subcategory.

Figures 2.1 to 2.44 show the monthly average loadings of the daily, thrice weekly and weekly parameters for each mill by parameter and process subcategory.

Figures 3.1 to 3.8 show the monthly average production based loadings of 5-day biological oxygen demand and total suspended solids for each mill by process subcategory. Production based loadings of 5-day biological oxygen demand and total suspended solids were calculated using total monthly average production data for each mill.

Figure 3.9 shows the monthly average production based loadings of adsorbable organic halide for each mill in the sulphate (kraft) process subcategory. Production based loadings of adsorbable organic halide were calculated using bleached kraft pulp monthly average production data for each mill.

## VI CURRENT STATUS OF THE MISA PULP AND PAPER SECTOR

The Ministry is in the process of reviewing the entire twelve months of effluent monitoring data for quality assurance/quality control (QA/QC). This data will be used to develop a list of candidate parameters for control. These parameters will be then be used in the development of effluent limits for the MISA Pulp and Paper Sector.

TABLE 1.1
PRIORITY POLLUTANTS DETECTED IN THE SULPHATE (KRAFT) SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Adsorbable Organic Halide | 671 | 100 | .04 | 134.95 | 16.72 | mg/L |
| Aluminum | 228 | 100 | 70.00 | 8,590.00 | 1,566.14 | ug/L |
| BOD, 5 day, Total Demand | 661 | 100 | 3.00 | 379.00 | 110.94 | mg/L |
| COD | 1338 | 100 | 29.00 | 6,000.00 | 595.47 | mg/L |
| DOC | 184 | 100 | 9.19 | 156.60 | 109.49 | mg/L |
| Hydrogen ion (pH) | 1528 | 100 | 2.40 | 11.20 | 6.86 | |
| Specific conductance | 1528 | 100 | 132.00 | 4,120.00 | 1,496.04 | usiem/cm |
| Total Kjeldahl nitrogen | 125 | 100 | .42 | 13.30 | 4.19 | mg/L |
| Total phosphorus | 104 | 100 | .18 | 2.24 | .84 | mg/L |
| Total suspended solids | 1528 | 100 | .00 | 259.00 | 59.18 | mg/L |
| Zinc | 228 | 100 | .00 | 310.00 | 92.98 | ug/L |
| Chloroform | 51 | 98 | .00 | 1,884.00 | 360.39 | ug/L |
| VSS | 108 | 98 | .00 | 220.00 | 54.27 | mg/L |
| Ammonia plus Ammonium | 125 | 94 | .00 | 3.27 | .65 | mg/L |
| Sulphide | 52 | 92 | .00 | 1.32 | .20 | mg/L |
| Dehydroabietic Acid | 668 | 84 | .00 | 8.46 | .44 | mg/L |
| Abietic Acid | 52 | 73 | .00 | 3.50 | .29 | mg/L |
| Total TCDF | 48 | 73 | .00 | .52 | .09 | ng/L |
| Chlorodehydroabietic Acid | 51 | 69 | .00 | .62 | .08 | mg/L |
| Isopimaric Acid | 51 | 69 | .00 | 3.50 | .23 | mg/L |
| Oleic Acid | 51 | 69 | .00 | .78 | .11 | mg/L |
| Nitrate+Nitrite | 124 | 63 | .00 | 28.99 | 3.61 | mg/L |
| Copper | 50 | 59 | .00 | 30.00 | 8.56 | ug/L |
| Pimaric Acid | 51 | 59 | .00 | .83 | .08 | mg/L |
| Neoabietic Acid | 52 | 58 | .00 | 1.90 | .17 | mg/L |
| Chromium | 45 | 57 | .00 | 260.00 | 29.62 | ug/L |
| Dichlorodehydroabietic Ac. | 667 | 56 | .00 | .84 | .04 | mg/L |
| Levopimaric Acid | 41 | 51 | .00 | .23 | .02 | mg/L |
| Octachlorodibenzo-p-dioxin | 50 | 50 | .00 | 1.40 | .09 | ng/L |
| 2,4-Dichlorophenol | 52 | 46 | .00 | 9.20 | 1.52 | ug/L |
| Nickel | 51 | 46 | .00 | 90.00 | 9.14 | ug/L |
| Toluene | 49 | 43 | .00 | 31.00 | 2.60 | ug/L |
| Phenol | 52 | 42 | .00 | 143.00 | 17.33 | ug/L |
| 2,4,5-Trichlorotoluene | 47 | 34 | .00 | 4.39 | .39 | ug/L |
| 1,2,4-Trichlorobenzene | 48 | 33 | .00 | 3.57 | .13 | ug/L |
| 2,4,6-Trichlorophenol | 52 | 33 | .00 | 15.20 | 2.13 | ug/L |
| Molybdenum | 52 | 31 | .00 | 25.00 | 4.60 | ug/L |
| Thallium | 52 | 29 | .00 | 30.00 | 6.92 | ug/L |
| Total TCDD | 49 | 29 | .00 | .93 | .06 | ng/L |
| Vanadium | 52 | 29 | .00 | 30.00 | 2.09 | ug/L |
| o-Cresol | 52 | 29 | .00 | 23.60 | 1.86 | ug/L |
| Benzene | 49 | 27 | .00 | 38.00 | 2.90 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 46 | 26 | .00 | .61 | .03 | ug/L |
| Camphene | 52 | 23 | .00 | 18.40 | 1.39 | ug/L |
| Total PCDF | 50 | 22 | .00 | .13 | .01 | ng/L |
| 2,3,5-Trichlorophenol | 52 | 21 | .00 | 20.40 | 1.96 | ug/L |
| 1,2,3,5-Tetrachlorobenzene | 44 | 20 | .00 | 4.50 | .25 | ug/L |
| 1,2,3-Trichlorobenzene | 46 | 20 | .00 | 2.39 | .13 | ug/L |
| Beryllium | 52 | 19 | .00 | 3.00 | .37 | ug/L |
| Hexachlorobenzene | 46 | 17 | .00 | 18.65 | .44 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.1 (cont'd)
PRIORITY POLLUTANTS DETECTED IN THE SULPHATE (KRAFT) SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Hexachlorobutadiene | 48 | 17 | .00 | .07 | .01 | ug/L |
| Lead | 51 | 17 | .00 | 50.00 | 2.96 | ug/L |
| Naphthalene | 52 | 17 | .00 | 10.50 | .58 | ug/L |
| Phenanthrene | 52 | 17 | .00 | 24.20 | 1.39 | ug/L |
| p-Cresol | 49 | 16 | .00 | 3.00 | .28 | ug/L |
| Cadmium | 52 | 15 | .00 | 4.00 | .35 | ug/L |
| Mercury | 52 | 15 | .00 | .20 | .02 | ug/L |
| Total H6CDD | 50 | 14 | .00 | .10 | .01 | ng/L |
| Total H7CDD | 50 | 14 | .00 | .21 | .01 | ng/L |
| m-Cresol | 49 | 14 | .00 | 56.00 | 2.87 | ug/L |
| m-Xylene and p-Xylene | 50 | 14 | .00 | 110.00 | 2.40 | ug/L |
| 2,4-Dimethylphenol | 52 | 13 | .00 | 2.00 | .13 | ug/L |
| 2,3,7,8 TCDD | 51 | 12 | .00 | .02 | .00 | ng/L |
| o-Xylene | 50 | 12 | .00 | 52.00 | 1.19 | ug/L |
| Hexachloroethane | 47 | 11 | .00 | .05 | .00 | ug/L |
| Octachlorostyrene | 46 | 11 | .00 | .40 | .01 | ug/L |
| Fluoranthene | 52 | 10 | .00 | 9.80 | .40 | ug/L |
| Hexachlorocyclopentadiene | 49 | 10 | .00 | .15 | .01 | ug/L |
| Methylene chloride | 49 | 10 | .00 | 10.40 | .58 | ug/L |
| Styrene | 49 | 10 | .00 | 3.10 | .16 | ug/L |
| Acenaphthylene | 52 | 8 | .00 | 6.30 | .31 | ug/L |
| Octachlorodibenzofuran | 51 | 8 | .00 | .05 | .00 | ng/L |
| Pyrene | 52 | 8 | .00 | 4.90 | .17 | ug/L |
| Total PCDD | 51 | 8 | .00 | .20 | .01 | ng/L |
| 1,2,3,4-Tetrachlorobenzene | 47 | 6 | .00 | .18 | .01 | ug/L |
| 2-Chlorophenol | 52 | 6 | .00 | .80 | .03 | ug/L |
| Pentachlorobenzene | 48 | 6 | .00 | .41 | .01 | ug/L |
| 2,4,5-Trichlorophenol | 52 | 4 | .00 | 7.30 | .21 | ug/L |
| 4,6-Dinitro-o-cresol | 50 | 4 | .00 | 165.00 | 4.90 | ug/L |
| 4-Chloro-3-methylphenol | 52 | 4 | .00 | .50 | .01 | ug/L |
| Benzo(k)fluoranthene | 52 | 4 | .00 | 1.80 | .05 | ug/L |
| Chlorobenzene | 49 | 4 | .00 | 8.40 | .18 | ug/L |
| Chrysene | 52 | 4 | .00 | 2.80 | .10 | ug/L |
| Total H6CDF | 50 | 4 | .00 | .12 | .00 | ng/L |
| Total H7CDF | 51 | 4 | .00 | .05 | .00 | ng/L |
| 1,1-Dichloroethane | 49 | 2 | .00 | 4.80 | .10 | ug/L |
| 1,3-Dichlorobenzene | 49 | 2 | .00 | .33 | .01 | ug/L |
| 1-Methylnaphthalene | 52 | 2 | .00 | .20 | .00 | ug/L |
| 2,3,4,5-Tetrachlorophenol | 52 | 2 | .00 | 4.10 | .08 | ug/L |
| 2,3,4,6-Tetrachlorophenol | 52 | 2 | .00 | 1.20 | .02 | ug/L |
| 2,4-Dinitrophenol | 47 | 2 | .00 | 165.00 | 3.51 | ug/L |
| 2,6-Dichlorophenol | 52 | 2 | .00 | .70 | .01 | ug/L |
| 2-Chloronaphthalene | 52 | 2 | .00 | .00 | .00 | ug/L |
| 2-Methylnaphthalene | 52 | 2 | .00 | .30 | .01 | ug/L |
| 4-Nitrophenol | 50 | 2 | .00 | 9.70 | .19 | ug/L |
| Anthracene | 52 | 2 | .00 | 2.50 | .05 | ug/L |
| Benz(a)anthracene | 52 | 2 | .00 | 1.90 | .04 | ug/L |
| Benzo(a)pyrene | 52 | 2 | .00 | .70 | .01 | ug/L |
| Benzo(b)fluoranthene | 52 | 2 | .00 | 1.80 | .03 | ug/L |
| Benzo(g,h,i)perylene | 51 | 2 | .00 | 10.00 | .20 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.1 (cont'd)
PRIORITY POLLUTANTS DETECTED IN THE SULPHATE (KRAFT) SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Chloromethane | 48 | 2 | .00 | 17.40 | .36 | ug/L |
| Fluorene | 52 | 2 | .00 | 1.30 | .03 | ug/L |
| Pentachlorophenol | 50 | 2 | .00 | 1.20 | .02 | ug/L |
| Silver | 52 | 2 | .00 | 1.80 | .03 | ug/L |
| Trichloroethylene | 49 | 2 | .00 | 3.18 | .06 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.2
PRIORITY POLLUTANTS DETECTED IN THE SULPHITE-MECHANICAL SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 201 | 100 | 30.00 | 10,600.00 | 1,213.18 | ug/L |
| BOD, 5 day, Total Demand | 575 | 100 | 12.00 | 1,288.00 | 443.22 | mg/L |
| COD | 534 | 100 | 45.00 | 3,048.00 | 1,018.31 | mg/L |
| Conductivity, average | 179 | 100 | 124.00 | 491.00 | 302.91 | usiem/cm |
| Conductivity, maximum | 179 | 100 | 260.00 | 1,000.00 | 638.88 | usiem/cm |
| Conductivity, minimum | 179 | 100 | .00 | 400.00 | 216.26 | usiem/cm |
| DOC | 783 | 100 | 3.50 | 1,360.00 | 431.94 | mg/L |
| Hydrogen ion (pH) | 1328 | 100 | 3.10 | 11.54 | 6.09 | |
| Specific conductance | 1148 | 100 | 106.00 | 2,170.00 | 788.23 | usiem/cm |
| Total Kjeldahl nitrogen | 53 | 100 | .55 | 12.60 | 3.35 | mg/L |
| Total phosphorus | 52 | 100 | .05 | 3.00 | .63 | mg/L |
| Total suspended solids | 1331 | 100 | 4.00 | 498.00 | 79.36 | mg/L |
| VSS | 9 | 100 | 16.00 | 84.00 | 38.00 | mg/L |
| Zinc | 199 | 99 | .00 | 560.00 | 86.96 | ug/L |
| Dehydroabietic Acid | 570 | 98 | .00 | 16.90 | 3.34 | mg/L |
| Isopimaric Acid | 43 | 95 | .00 | 6.89 | 1.44 | mg/L |
| Pimaric Acid | 43 | 95 | .00 | 3.70 | .35 | mg/L |
| Abietic Acid | 43 | 91 | .00 | 7.00 | 1.82 | mg/L |
| Nitrate+Nitrite | 53 | 91 | .00 | 1.15 | .19 | mg/L |
| Neoabietic Acid | 43 | 88 | .00 | 3.86 | .61 | mg/L |
| Copper | 45 | 87 | .00 | 40.00 | 13.98 | ug/L |
| Ammonia plus Ammonium | 53 | 83 | .00 | 8.70 | .78 | mg/L |
| Chloroform | 44 | 82 | .00 | 65.00 | 6.27 | ug/L |
| Levopimaric Acid | 36 | 78 | .00 | 4.00 | .48 | mg/L |
| Oleic Acid | 43 | 74 | .00 | 1.59 | .32 | mg/L |
| Phenol | 44 | 73 | .00 | 200.00 | 13.08 | ug/L |
| Octachlorodibenzo-p-dioxin | 24 | 71 | .00 | .25 | .08 | ng/L |
| p-Cresol | 41 | 71 | .00 | 290.00 | 17.48 | ug/L |
| m-Cresol | 41 | 68 | .00 | 38.00 | 4.38 | ug/L |
| Toluene | 44 | 57 | .00 | 117.00 | 5.59 | ug/L |
| Chromium | 45 | 53 | .00 | 34.40 | 4.23 | ug/L |
| Camphene | 44 | 52 | .00 | 18.80 | 1.82 | ug/L |
| Methylene chloride | 44 | 48 | .00 | 190.00 | 6.97 | ug/L |
| Vanadium | 45 | 42 | .00 | 41.00 | 6.22 | ug/L |
| Naphthalene | 44 | 41 | .00 | 2.20 | .31 | ug/L |
| Chlorodehydroabietic Acid | 44 | 39 | .00 | .25 | .03 | mg/L |
| m-Xylene and p-Xylene | 44 | 36 | .00 | 2.60 | .30 | ug/L |
| 1,2,4-Trichlorobenzene | 42 | 33 | .00 | .14 | .01 | ug/L |
| Benzene | 44 | 30 | .00 | 10.20 | 1.00 | ug/L |
| Styrene | 44 | 30 | .00 | 5.00 | .29 | ug/L |
| Molybdenum | 45 | 29 | .00 | 29.00 | 2.71 | ug/L |
| o-Cresol | 44 | 25 | .00 | 2.10 | .21 | ug/L |
| o-Xylene | 44 | 25 | .00 | 2.10 | .13 | ug/L |
| Mercury | 45 | 20 | .00 | 1.70 | .06 | ug/L |
| 1-Methylnaphthalene | 44 | 18 | .00 | 1.69 | .10 | ug/L |
| 2-Methylnaphthalene | 44 | 18 | .00 | 1.63 | .10 | ug/L |
| Octachlorodibenzofuran | 24 | 17 | .00 | .12 | .01 | ng/L |
| 1,2,3-Trichlorobenzene | 43 | 14 | .00 | .17 | .01 | ug/L |
| Hexachlorobenzene | 42 | 14 | .00 | .05 | .00 | ug/L |
| Lead | 45 | 13 | .00 | 41.00 | 3.24 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.2 (cont'd)
PRIORITY POLLUTANTS DETECTED IN THE SULPHITE-MECHANICAL SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Nickel | 45 | 13 | .00 | 10.00 | .84 | ug/L |
| Beryllium | 45 | 11 | .00 | 3.40 | .24 | ug/L |
| Chloromethane | 43 | 11 | .00 | 33.00 | 1.21 | ug/L |
| Indole | 44 | 11 | .00 | .70 | .05 | ug/L |
| PCBT | 10 | 10 | .00 | .05 | .01 | ug/L |
| 1,1-Dichloroethylene | 41 | 9 | .00 | 5.00 | .02 | ug/L |
| Acenaphthylene | 44 | 9 | .00 | 1.30 | .05 | ug/L |
| Bromomethane | 44 | 9 | .00 | 61.00 | 2.04 | ug/L |
| 1,1-Dichloroethane | 44 | 7 | .00 | 25.00 | .82 | ug/L |
| Chlorobenzene | 44 | 7 | .00 | 10.70 | .28 | ug/L |
| Cobalt | 45 | 7 | .00 | 12.00 | .53 | ug/L |
| Phenanthrene | 44 | 7 | .00 | .30 | .02 | ug/L |
| 1,2,3,5-Tetrachlorobenzene | 40 | 5 | .00 | .25 | .01 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 42 | 5 | .00 | .01 | .00 | ug/L |
| 2,4,5-Trichlorotoluene | 40 | 5 | .00 | 1.02 | .03 | ug/L |
| Acenaphthene | 44 | 5 | .00 | .60 | .02 | ug/L |
| Bromodichloromethane | 44 | 5 | .00 | 1.60 | .06 | ug/L |
| Cis-1,3-Dichloropropylene | 44 | 5 | .00 | 4.00 | .10 | ug/L |
| Dibromochloromethane | 44 | 5 | .00 | .96 | .04 | ug/L |
| Octachlorostyrene | 43 | 5 | .00 | .02 | .00 | ug/L |
| Cadmium | 45 | 4 | .00 | 12.00 | .31 | ug/L |
| Silver | 45 | 4 | .00 | 3.00 | .09 | ug/L |
| Total N7CDD | 24 | 4 | .00 | .03 | .00 | ng/L |
| Total PCDF | 24 | 4 | .00 | .03 | .00 | ng/L |
| Total TCDF | 24 | 4 | .00 | .01 | .00 | ng/L |
| 1,1,2,2-Tetrachloroethane | 44 | 2 | .00 | .60 | .01 | ug/L |
| 1,1,2-Trichloroethane | 44 | 2 | .00 | .57 | .01 | ug/L |
| 1,2-Dichlorobenzene | 44 | 2 | .00 | .42 | .01 | ug/L |
| 1,2-Dichloroethane | 44 | 2 | .00 | .48 | .01 | ug/L |
| 1,2-Dichloropropane | 44 | 2 | .00 | .61 | .01 | ug/L |
| 1,3-Dichlorobenzene | 44 | 2 | .00 | .19 | .00 | ug/L |
| 1,4-Dichlorobenzene | 44 | 2 | .00 | .30 | .01 | ug/L |
| 2,3,4,5-Tetrachlorophenol | 44 | 2 | .00 | .70 | .02 | ug/L |
| 2,4-Dimethylphenol | 44 | 2 | .00 | .50 | .01 | ug/L |
| 4-Chloro-3-methylphenol | 44 | 2 | .00 | 2.20 | .05 | ug/L |
| 4-Nitrophenol | 43 | 2 | .00 | 21.00 | .49 | ug/L |
| Benzo(a)pyrene | 44 | 2 | .00 | 2.00 | .05 | ug/L |
| Benzo(g,h,i)perylene | 44 | 2 | .00 | 2.00 | .05 | ug/L |
| Bromoform | 44 | 2 | .00 | 1.40 | .03 | ug/L |
| Carbon tetrachloride | 44 | 2 | .00 | 1.16 | .03 | ug/L |
| Dibenz(a,h)anthracene | 44 | 2 | .00 | 2.00 | .05 | ug/L |
| Ethylene dibromide | 44 | 2 | .00 | .69 | .02 | ug/L |
| Fluoranthene | 44 | 2 | .00 | .40 | .01 | ug/L |
| Hexachlorocyclopentadiene | 44 | 2 | .00 | .01 | .00 | ug/L |
| Hexachloroethane | 44 | 2 | .00 | .01 | .00 | ug/L |
| Indeno(1,2,3-cd)pyrene | 44 | 2 | .00 | 2.00 | .05 | ug/L |
| Pentachlorobenzene | 43 | 2 | .00 | .06 | .00 | ug/L |
| Pentachlorophenol | 43 | 2 | .00 | 3.00 | .07 | ug/L |
| Perylene | 44 | 2 | .00 | 2.00 | .05 | ug/L |
| Tetrachloroethylene | 44 | 2 | .00 | .87 | .02 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.2 (cont'd)
PRIORITY POLLUTANTS DETECTED IN THE SULPHITE-MECHANICAL SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Thallium | 45 | 2 | .00 | 68.00 | 1.51 | ug/L |
| Trans-1,2-Dichloroethylene | 44 | 2 | .00 | .65 | .01 | ug/L |
| Trans-1,3-Dichloropropylene | 44 | 2 | .00 | .41 | .01 | ug/L |
| Trichloroethylene | 44 | 2 | .00 | .80 | .02 | ug/L |
| Trichlorofluoromethane | 44 | 2 | .00 | .22 | .01 | ug/L |
| Vinyl chloride | 44 | 2 | .00 | 2.39 | .05 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.3
PRIORITY POLLUTANTS DETECTED IN THE CORRUGATING SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| BOD, 5 day, Total Demand | 226 | 100 | 199.00 | 4,213.00 | 1,763.85 | mg/L |
| COD | 178 | 100 | 1,215.00 | 6,600.00 | 3,388.60 | mg/L |
| DOC | 331 | 100 | 97.00 | 4,270.00 | 2,142.99 | mg/L |
| Hydrogen ion (pH) | 509 | 100 | 4.29 | 12.16 | 6.79 | |
| Specific conductance | 508 | 100 | 170.00 | 4,210.00 | 2,114.66 | usiem/cm |
| Total phosphorus | 36 | 100 | 1.00 | 21.95 | 7.15 | mg/L |
| Total suspended solids | 509 | 100 | 4.00 | 1,188.00 | 235.17 | mg/L |
| VSS | 24 | 100 | 199.00 | 714.00 | 394.71 | mg/L |
| Zinc | 73 | 100 | 29.00 | 3,013.00 | 590.89 | ug/L |
| Aluminum | 75 | 99 | .00 | 4,630.00 | 1,529.20 | ug/L |
| Ammonia plus Ammonium | 36 | 97 | .00 | 80.61 | 14.64 | mg/L |
| Nitrate+Nitrite | 35 | 97 | .00 | 389.17 | 191.47 | mg/L |
| Total Kjeldahl nitrogen | 36 | 97 | .00 | 182.26 | 58.73 | mg/L |
| Cadmium | 18 | 89 | .00 | 20.80 | 8.57 | ug/L |
| Copper | 18 | 89 | .00 | 98.00 | 49.94 | ug/L |
| Pimaric Acid | 18 | 89 | .00 | 1.59 | .21 | mg/L |
| Isopimaric Acid | 18 | 83 | .00 | 1.56 | .29 | mg/L |
| Dehydroabietic Acid | 232 | 81 | .00 | 5.47 | .50 | mg/L |
| Oleic Acid | 18 | 78 | .00 | 3.65 | .47 | mg/L |
| Levopimaric Acid | 15 | 73 | .00 | 11.20 | .89 | mg/L |
| Abietic Acid | 18 | 67 | .00 | .84 | .24 | mg/L |
| Cobalt | 18 | 67 | .00 | 90.00 | 32.22 | ug/L |
| Neoabietic Acid | 18 | 67 | .00 | 1.82 | .40 | mg/L |
| Thallium | 18 | 67 | .00 | 230.00 | 52.78 | ug/L |
| Lead | 18 | 61 | .00 | 130.00 | 43.89 | ug/L |
| Nickel | 18 | 61 | .00 | 230.00 | 55.56 | ug/L |
| Chlorodehydroabietic Acid | 18 | 56 | .00 | .41 | .05 | mg/L |
| Vanadium | 18 | 44 | .00 | 120.00 | 32.22 | ug/L |
| Molybdenum | 18 | 39 | .00 | 60.00 | 14.44 | ug/L |
| Silver | 18 | 39 | .00 | 131.00 | 20.89 | ug/L |
| Octachlorodibenzo-p-dioxin | 3 | 33 | .00 | 6.80 | 2.27 | ng/L |
| Octachlorodibenzofuran | 3 | 33 | .00 | .75 | .25 | ng/L |
| Phenol | 18 | 33 | .00 | 846.00 | 148.74 | ug/L |
| Total H6CDD | 3 | 33 | .00 | .29 | .10 | ng/L |
| Total H7CDD | 3 | 33 | .00 | 1.00 | .33 | ng/L |
| Total H7CDF | 3 | 33 | .00 | .35 | .12 | ng/L |
| Total TCDF | 3 | 33 | .00 | .10 | .03 | ng/L |
| o-Cresol | 18 | 33 | .00 | 11.90 | 2.62 | ug/L |
| Chloroform | 20 | 20 | .00 | 9.10 | .81 | ug/L |
| Chromium | 18 | 17 | .00 | 131.00 | 15.50 | ug/L |
| Mercury | 18 | 11 | .00 | .40 | .04 | ug/L |
| Acenaphthylene | 18 | 6 | .00 | 1.80 | .10 | ug/L |
| Fluoranthene | 18 | 6 | .00 | 1.00 | .06 | ug/L |
| Fluorene | 18 | 6 | .00 | 3.40 | .19 | ug/L |
| Naphthalene | 18 | 6 | .00 | 3.10 | .17 | ug/L |
| Phenanthrene | 18 | 6 | .00 | 11.40 | .63 | ug/L |
| Pyrene | 18 | 6 | .00 | .40 | .02 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.4
PRIORITY POLLUTANTS DETECTED IN THE DEINKING-BOARD-FINE PAPERS-TISSUE SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Adsorbable Organic Halide | 5 | 100 | .27 | 18.70 | 4.89 | mg/L |
| BOD, 5 day, Total Demand | 602 | 100 | .40 | 640.00 | 146.04 | mg/L |
| COD | 918 | 100 | 31.00 | 1,722.00 | 381.86 | mg/L |
| DOC | 262 | 100 | 4.70 | 108.00 | 69.42 | mg/L |
| Hydrogen ion (pH) | 1181 | 100 | 4.15 | 10.66 | 7.02 | |
| Specific conductance | 1179 | 100 | 169.00 | 1,300.00 | 571.06 | usiem/cm |
| Total Kjeldahl nitrogen | 78 | 100 | .16 | 17.90 | 5.60 | mg/L |
| Total phosphorus | 62 | 100 | .02 | 1.12 | .31 | mg/L |
| VSS | 46 | 100 | 16.60 | 164.00 | 50.85 | mg/L |
| Aluminum | 178 | 99 | .00 | 19,800.00 | 2,376.23 | ug/L |
| Zinc | 177 | 96 | .00 | 360.00 | 47.50 | ug/L |
| Ammonia plus Ammonium | 79 | 94 | .00 | 9.10 | 1.37 | mg/L |
| Total suspended solids | 1181 | 91 | .00 | 551.00 | 53.34 | mg/L |
| Dehydroabietic Acid | 42 | 88 | .00 | 2.40 | .48 | mg/L |
| Nitrate+Nitrite | 78 | 87 | .00 | .89 | .19 | mg/L |
| Copper | 43 | 81 | .00 | 34.00 | 8.42 | ug/L |
| Nickel | 43 | 67 | .00 | 32.00 | 6.97 | ug/L |
| Phenol | 42 | 67 | .00 | 75.00 | 8.13 | ug/L |
| Octachlorodibenzo-p-dioxin | 16 | 65 | .00 | .70 | .08 | ng/L |
| Isopimaric Acid | 42 | 58 | .00 | .77 | .04 | mg/L |
| Toluene | 43 | 56 | .00 | 9.10 | 1.13 | ug/L |
| m-Cresol | 41 | 56 | .00 | 17.10 | 3.14 | ug/L |
| Vanadium | 43 | 53 | .00 | 42.00 | 7.58 | ug/L |
| Naphthalene | 42 | 52 | .00 | 11.20 | .94 | ug/L |
| Pimaric Acid | 42 | 51 | .00 | .19 | .02 | mg/L |
| Chloroform | 43 | 49 | .00 | 240.00 | 13.45 | ug/L |
| Oleic Acid | 42 | 49 | .00 | .55 | .07 | mg/L |
| 1,2,4-Trichlorobenzene | 43 | 47 | .00 | .05 | .00 | ug/L |
| m-Xylene and p-Xylene | 43 | 47 | .00 | 2.10 | .39 | ug/L |
| Chromium | 43 | 44 | .00 | 25.00 | 3.63 | ug/L |
| Abietic Acid | 43 | 42 | .00 | .48 | .04 | mg/L |
| Levopimaric Acid | 43 | 42 | .00 | .31 | .04 | mg/L |
| o-Xylene | 43 | 40 | .00 | 3.90 | .30 | ug/L |
| Benzene | 43 | 35 | .00 | 10.30 | .73 | ug/L |
| Methylene chloride | 42 | 35 | .00 | 300.00 | 13.28 | ug/L |
| p-Cresol | 41 | 34 | .00 | 6.90 | .86 | ug/L |
| Chlorodehydroabietic Acid | 43 | 33 | .00 | .09 | .01 | mg/L |
| Styrene | 43 | 28 | .00 | 1.10 | .19 | ug/L |
| Bromodichloromethane | 43 | 26 | .00 | 13.40 | .88 | ug/L |
| 1,1-Dichloroethylene | 41 | 23 | .00 | 18.30 | 1.45 | ug/L |
| Total TCDF | 19 | 21 | .00 | .09 | .01 | ng/L |
| 1,1-Dichloroethane | 41 | 19 | .00 | 1.80 | .19 | ug/L |
| Lead | 43 | 19 | .00 | 56.00 | 4.14 | ug/L |
| Neoabietic Acid | 43 | 19 | .00 | .18 | .01 | mg/L |
| Tetrachloroethylene | 43 | 19 | .00 | 2.90 | .20 | ug/L |
| 1-Methylnaphthalene | 42 | 17 | .00 | 4.04 | .31 | ug/L |
| 2-Methylnaphthalene | 42 | 17 | .00 | 8.00 | .56 | ug/L |
| 4-Chloro-3-methylphenol | 42 | 17 | .00 | 1.10 | .11 | ug/L |
| o-Cresol | 42 | 17 | .00 | 1.20 | .14 | ug/L |
| Dibromochloromethane | 43 | 16 | .00 | 2.90 | .21 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 1.4 (cont'd)
PRIORITY POLLUTANTS DETECTED IN THE DEINKING-BOARD-FINE PAPERS-TISSUE SUBCATEGORY PROCESS EFFLUENT

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Hexachlorocyclopentadiene | 43 | 16 | .00 | .73 | .03 | ug/L |
| Trichloroethylene | 43 | 16 | .00 | 2.30 | .15 | ug/L |
| Pentachlorophenol | 42 | 14 | .00 | 2.40 | .18 | ug/L |
| Phenanthrene | 42 | 14 | .00 | 1.20 | .05 | ug/L |
| 2,4,6-Trichlorophenol | 42 | 12 | .00 | 5.60 | .19 | ug/L |
| Indole | 42 | 12 | .00 | 5.50 | .18 | ug/L |
| Mercury | 43 | 12 | .00 | .10 | .01 | ug/L |
| Total H6CDF | 19 | 11 | .00 | .50 | .03 | ng/L |
| 2,4-Dimethylphenol | 42 | 10 | .00 | 2.40 | .09 | ug/L |
| Hexachloroethane | 43 | 9 | .00 | .01 | .00 | ug/L |
| Molybdenum | 43 | 9 | .00 | 13.00 | .76 | ug/L |
| 1,2,3,4-Tetrachlorobenzene | 43 | 7 | .00 | .02 | .00 | ug/L |
| 1,2,3-Trichlorobenzene | 43 | 7 | .00 | .02 | .00 | ug/L |
| 1,2-Dichloroethane | 42 | 7 | .00 | 5.50 | .14 | ug/L |
| Bromomethane | 43 | 7 | .00 | 36.00 | 1.17 | ug/L |
| Fluorene | 42 | 7 | .00 | 1.30 | .06 | ug/L |
| Silver | 43 | 7 | .00 | 2.00 | .13 | ug/L |
| Total H7CDD | 18 | 6 | .00 | .04 | .00 | ng/L |
| 1,2-Dichlorobenzene | 43 | 5 | .00 | .84 | .03 | ug/L |
| 1,2-Dichloropropane | 43 | 5 | .00 | 5.90 | .27 | ug/L |
| 1,3-Dichlorobenzene | 43 | 5 | .00 | 1.00 | .03 | ug/L |
| 2,4,5-Trichlorotoluene | 43 | 5 | .00 | .01 | .00 | ug/L |
| 2,4-Dichlorophenol | 42 | 5 | .00 | 3.80 | .09 | ug/L |
| Benzo(a)pyrene | 42 | 5 | .00 | 1.00 | .05 | ug/L |
| Benzo(g,h,i)perylene | 42 | 5 | .00 | 5.00 | .24 | ug/L |
| Chloromethane | 42 | 5 | .00 | 260.00 | 6.25 | ug/L |
| Dibenz(a,h)anthracene | 42 | 5 | .00 | 10.00 | .48 | ug/L |
| Indeno(1,2,3-cd)pyrene | 42 | 5 | .00 | 5.00 | .24 | ug/L |
| Perylene | 42 | 5 | .00 | 1.00 | .05 | ug/L |
| Total PCDF | 19 | 5 | .00 | .02 | .00 | ng/L |
| Total TCDD | 19 | 5 | .00 | .02 | .00 | ng/L |
| 1,4-Dichlorobenzene | 43 | 2 | .00 | .31 | .01 | ug/L |
| 2,6-Dichlorophenol | 42 | 2 | .00 | .05 | .00 | ug/L |
| 2-Chlorophenol | 42 | 2 | .00 | .80 | .02 | ug/L |
| Anthracene | 42 | 2 | .00 | .02 | .00 | ug/L |
| Pentachlorobenzene | 43 | 2 | .00 | .03 | .00 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.1
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., IROQUOIS FALLS DIVISION

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 5 | 100 | .06 | 3.30 | 1.57 | mg/L |
| Aluminum | 22 | 100 | 75.00 | 4,000.00 | 2,629.77 | ug/L |
| Ammonia plus Ammonium | 5 | 100 | .11 | .22 | .16 | mg/L |
| BOD, 5 day, Total Demand | 65 | 100 | 120.00 | 894.00 | 624.89 | mg/L |
| Camphene | 5 | 100 | 2.30 | 12.70 | 5.26 | ug/L |
| Copper | 5 | 100 | 10.00 | 40.00 | 22.60 | ug/L |
| DOC | 153 | 100 | 25.00 | 1,360.00 | 673.12 | mg/L |
| Dehydroabietic Acid | 63 | 100 | 1.10 | 7.30 | 4.21 | mg/L |
| Hydrogen ion (pH) | 153 | 100 | 4.54 | 11.54 | 5.26 | |
| Isopimaric Acid | 5 | 100 | .61 | 2.60 | 1.10 | mg/L |
| Neoabietic Acid | 5 | 100 | .02 | .46 | .23 | mg/L |
| Nitrate+Nitrite | 5 | 100 | .19 | .29 | .23 | mg/L |
| Octachlorodibenzofuran | 1 | 100 | .12 | .12 | .12 | ng/L |
| Pimaric Acid | 5 | 100 | .17 | .42 | .30 | mg/L |
| Specific conductance | 153 | 100 | 151.00 | 1,350.00 | 1,000.51 | usiem/cm |
| Total Kjeldahl nitrogen | 5 | 100 | 3.10 | 5.80 | 3.86 | mg/L |
| Total phosphorus | 5 | 100 | .64 | 1.85 | 1.14 | mg/L |
| Total suspended solids | 153 | 100 | 36.00 | 252.00 | 115.89 | mg/L |
| Zinc | 21 | 100 | 11.00 | 170.00 | 114.62 | ug/L |
| 1,2,4-Trichlorobenzene | 5 | 80 | .00 | .04 | .01 | ug/L |
| Chloroform | 5 | 80 | .00 | 16.60 | 9.98 | ug/L |
| Chromium | 5 | 80 | .00 | 9.00 | 5.80 | ug/L |
| Methylene chloride | 5 | 80 | .00 | 7.90 | 3.77 | ug/L |
| Nickel | 5 | 80 | .00 | 10.00 | 6.00 | ug/L |
| Oleic Acid | 5 | 80 | .00 | .13 | .08 | mg/L |
| Phenol | 5 | 80 | .00 | 3.20 | 2.44 | ug/L |
| Vanadium | 5 | 80 | .00 | 25.00 | 12.80 | ug/L |
| m-Cresol | 5 | 80 | .00 | 4.20 | 2.42 | ug/L |
| p-Cresol | 5 | 80 | .00 | 1.64 | 1.15 | ug/L |
| 1-Methylnaphthalene | 5 | 60 | .00 | .90 | .36 | ug/L |
| 2-Methylnaphthalene | 5 | 60 | .00 | 1.00 | .40 | ug/L |
| Benzene | 5 | 60 | .00 | 6.90 | 2.72 | ug/L |
| Levopimaric Acid | 5 | 60 | .00 | .32 | .12 | mg/L |
| Toluene | 5 | 60 | .00 | 1.35 | .48 | ug/L |
| m-Xylene and p-Xylene | 5 | 60 | .00 | .76 | .32 | ug/L |
| Cadmium | 5 | 40 | .00 | 12.00 | 2.80 | ug/L |
| Hexachlorobenzene | 5 | 40 | .00 | .00 | .00 | ug/L |
| Lead | 5 | 40 | .00 | 41.00 | 12.20 | ug/L |
| Mercury | 5 | 40 | .00 | .12 | .04 | ug/L |
| Molybdenum | 5 | 40 | .00 | 23.00 | 6.20 | ug/L |
| Naphthalene | 5 | 40 | .00 | .50 | .18 | ug/L |
| Styrene | 5 | 40 | .00 | .44 | .18 | ug/L |
| 1,1-Dichloroethane | 5 | 20 | .00 | 25.00 | 5.00 | ug/L |
| Acenaphthylene | 5 | 20 | .00 | .10 | .02 | ug/L |
| Benzo(a)pyrene | 5 | 20 | .00 | 2.00 | .40 | ug/L |
| Benzo(g,h,i)perylene | 5 | 20 | .00 | 2.00 | .40 | ug/L |
| Beryllium | 5 | 20 | .00 | 2.00 | .40 | ug/L |
| Bromomethane | 5 | 20 | .00 | 61.00 | 12.20 | ug/L |
| Chlorodehydroabietic Acid | 5 | 20 | .00 | .10 | .02 | mg/L |
| Chloromethane | 5 | 20 | .00 | 33.00 | 6.60 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.1 (cont'd)

PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., IROQUOIS FALLS DIVISION

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Cobalt | 5 | 20 | .00 | 8.00 | 1.60 | ug/L |
| Dibenz(a,h)anthracene | 5 | 20 | .00 | 2.00 | .40 | ug/L |
| Hexachlorocyclopentadiene | 5 | 20 | .00 | .01 | .00 | ug/L |
| Indeno(1,2,3-cd)pyrene | 5 | 20 | .00 | 2.00 | .40 | ug/L |
| Indole | 5 | 20 | .00 | .10 | .02 | ug/L |
| Perylene | 5 | 20 | .00 | 2.00 | .40 | ug/L |
| Silver | 5 | 20 | .00 | 3.00 | .60 | ug/L |
| Thallium | 5 | 20 | .00 | 68.00 | 13.60 | ug/L |
| o-Cresol | 5 | 20 | .00 | .40 | .08 | ug/L |
| o-Xylene | 5 | 20 | .00 | .33 | .07 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.2a
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., FORT WILLIAM DIVISION - CONTROL POINT # 0100

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 5 | 100 | 1.32 | 2.60 | 2.09 | mg/L |
| Aluminum | 23 | 100 | 80.00 | 820.00 | 297.83 | ug/L |
| Ammonia plus Ammonium | 5 | 100 | .05 | .29 | .16 | mg/L |
| BOD, 5 day, Total Demand | 65 | 100 | 108.00 | 584.00 | 373.69 | mg/L |
| Chloroform | 5 | 100 | 4.60 | 65.00 | 21.86 | ug/L |
| Chromium | 5 | 100 | 2.00 | 11.00 | 7.20 | ug/L |
| DOC | 151 | 100 | 93.00 | 720.00 | 331.47 | mg/L |
| Dehydroabietic Acid | 67 | 100 | .00 | 7.70 | 4.29 | mg/L |
| Hydrogen ion (pH) | 150 | 100 | 6.23 | 7.44 | 6.73 | |
| Isopimaric Acid | 5 | 100 | .78 | 3.50 | 2.09 | mg/L |
| Levopimaric Acid | 5 | 100 | .11 | .39 | .21 | mg/L |
| Neoabietic Acid | 5 | 100 | .06 | .28 | .13 | mg/L |
| Nitrate+Nitrite | 5 | 100 | .02 | .17 | .08 | mg/L |
| Octachlorodibenzo-p-dioxin | 3 | 100 | .05 | .25 | .13 | ng/L |
| Phenol | 5 | 100 | 12.60 | 26.50 | 17.32 | ug/L |
| Pimaric Acid | 5 | 100 | .23 | .37 | .30 | mg/L |
| Specific conductance | 150 | 100 | 297.00 | 1,204.00 | 889.23 | usiem/cm |
| Total Kjeldahl nitrogen | 5 | 100 | 2.20 | 3.80 | 2.81 | mg/L |
| Total phosphorus | 5 | 100 | .33 | .58 | .46 | mg/L |
| Total suspended solids | 151 | 100 | 6.00 | 178.00 | 30.27 | mg/L |
| p-Cresol | 5 | 100 | 1.00 | 14.70 | 8.31 | ug/L |
| Zinc | 23 | 96 | .00 | 110.00 | 47.30 | ug/L |
| Copper | 5 | 80 | .00 | 19.00 | 9.20 | ug/L |
| Toluene | 5 | 80 | .00 | 24.00 | 8.67 | ug/L |
| m-Cresol | 5 | 80 | .00 | 8.00 | 3.96 | ug/L |
| Camphene | 5 | 60 | .00 | .92 | .42 | ug/L |
| Methylene chloride | 5 | 60 | .00 | 6.90 | 2.40 | ug/L |
| Oleic Acid | 5 | 60 | .00 | .14 | .05 | mg/L |
| Indole | 5 | 40 | .00 | .61 | .14 | ug/L |
| 1,2,4-Trichlorobenzene | 5 | 20 | .00 | .00 | .00 | ug/L |
| Acenaphthene | 5 | 20 | .00 | .10 | .02 | ug/L |
| Chlorobenzene | 5 | 20 | .00 | 10.70 | 2.14 | ug/L |
| Chlorodehydroabietic Acid | 5 | 20 | .00 | .04 | .01 | mg/L |
| Hexachlorobenzene | 5 | 20 | .00 | .00 | .00 | ug/L |
| Lead | 5 | 20 | .00 | 16.00 | 3.20 | ug/L |
| Mercury | 5 | 20 | .00 | .10 | .02 | ug/L |
| Molybdenum | 5 | 20 | .00 | 12.00 | 2.40 | ug/L |
| Styrene | 5 | 20 | .00 | .38 | .08 | ug/L |
| Vanadium | 5 | 20 | .00 | 5.00 | 1.00 | ug/L |
| m-Xylene and p-Xylene | 5 | 20 | .00 | .78 | .16 | ug/L |
| o-Cresol | 5 | 20 | .00 | .40 | .08 | ug/L |
| o-Xylene | 5 | 20 | .00 | .20 | .04 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.2b
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., FORT WILLIAM DIVISION
CONTROL POINT # 0200

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 5 | 100 | 1.39 | 7.00 | 3.44 | mg/L |
| Aluminum | 24 | 100 | 213.00 | 2,200.00 | 1,145.54 | ug/L |
| Ammonia plus Ammonium | 5 | 100 | .23 | .71 | .35 | mg/L |
| BOD, 5 day, Total Demand | 66 | 100 | 260.00 | 1,288.00 | 731.18 | mg/L |
| Chloroform | 5 | 100 | 1.34 | 5.30 | 2.56 | ug/L |
| DOC | 151 | 100 | 76.00 | 930.00 | 581.33 | mg/L |
| Dehydroabietic Acid | 68 | 100 | 2.70 | 16.90 | 7.86 | mg/L |
| Hydrogen ion (pH) | 150 | 100 | 4.84 | 7.93 | 7.03 | |
| Isopimaric Acid | 5 | 100 | 1.33 | 4.80 | 2.77 | mg/L |
| Levopimaric Acid | 5 | 100 | .47 | 4.00 | 2.16 | mg/L |
| Neoabietic Acid | 5 | 100 | .16 | 2.00 | 1.20 | mg/L |
| Octachlorodibenzo-p-dioxin | 3 | 100 | .03 | .18 | .08 | ng/L |
| Phenol | 5 | 100 | 12.60 | 200.00 | 81.20 | ug/L |
| Pimaric Acid | 5 | 100 | .25 | 3.70 | 1.05 | mg/L |
| Specific conductance | 150 | 100 | 324.00 | 2,170.00 | 1,418.72 | usiem/cm |
| Total Kjeldahl nitrogen | 5 | 100 | 5.10 | 11.70 | 7.48 | mg/L |
| Total phosphorus | 4 | 100 | 1.16 | 3.00 | 2.12 | mg/L |
| Total suspended solids | 151 | 100 | 40.00 | 251.00 | 123.77 | mg/L |
| Zinc | 24 | 100 | 41.00 | 390.00 | 170.92 | ug/L |
| m-Cresol | 5 | 100 | 7.10 | 38.00 | 14.70 | ug/L |
| p-Cresol | 5 | 100 | 7.60 | 290.00 | 109.00 | ug/L |
| Camphene | 5 | 80 | .00 | 18.80 | 8.40 | ug/L |
| Copper | 5 | 80 | .00 | 24.00 | 13.80 | ug/L |
| Nitrate+Nitrite | 5 | 80 | .00 | .20 | .09 | mg/L |
| Oleic Acid | 5 | 80 | .00 | 1.55 | .66 | mg/L |
| Toluene | 5 | 80 | .00 | 117.00 | 32.12 | ug/L |
| o-Cresol | 5 | 80 | .00 | 2.10 | 1.05 | ug/L |
| Acenaphthylene | 5 | 60 | .00 | 1.30 | .44 | ug/L |
| Mercury | 5 | 60 | .00 | 1.70 | .45 | ug/L |
| Methylene chloride | 5 | 60 | .00 | 13.90 | 4.01 | ug/L |
| Naphthalene | 5 | 60 | .00 | .70 | .38 | ug/L |
| Phenanthrene | 5 | 60 | .00 | .30 | .14 | ug/L |
| m-Xylene and p-Xylene | 5 | 60 | .00 | .69 | .32 | ug/L |
| Benzene | 5 | 40 | .00 | 10.20 | 2.25 | ug/L |
| Chromium | 5 | 40 | .00 | 17.00 | 6.20 | ug/L |
| Styrene | 5 | 40 | .00 | .87 | .25 | ug/L |
| o-Xylene | 5 | 40 | .00 | .68 | .20 | ug/L |
| 1,1-Dichloroethane | 5 | 20 | .00 | 10.80 | 2.16 | ug/L |
| 1,2,3,5-Tetrachlorobenzene | 5 | 20 | .00 | .00 | .00 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 5 | 20 | .00 | .00 | .00 | ug/L |
| 1,2,4-Trichlorobenzene | 5 | 20 | .00 | .01 | .00 | ug/L |
| 2,3,4,5-Tetrachlorophenol | 5 | 20 | .00 | .70 | .14 | ug/L |
| 4-Chloro-3-methylphenol | 5 | 20 | .00 | 2.20 | .44 | ug/L |
| 4-Nitrophenol | 5 | 20 | .00 | 21.00 | 4.20 | ug/L |
| Acenaphthene | 5 | 20 | .00 | .60 | .12 | ug/L |
| Chlorobenzene | 5 | 20 | .00 | 1.09 | .22 | ug/L |
| Chlorodehydroabietic Acid | 5 | 20 | .00 | .20 | .04 | mg/L |
| Chloromethane | 5 | 20 | .00 | 5.30 | 1.06 | ug/L |
| Cobalt | 5 | 20 | .00 | 12.00 | 2.40 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.2b (cont'd)
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., FORT WILLIAM DIVISION
CONTROL POINT # 0200

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Hexachlorobenzene | 5 | 20 | .00 | .05 | .01 | ug/L |
| Lead | 5 | 20 | .00 | 39.00 | 7.80 | ug/L |
| Vanadium | 5 | 20 | .00 | 41.00 | 8.20 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.3
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., PROVINCIAL PAPERS DIVISION

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 22 | 100 | 520.00 | 3,800.00 | 1,586.36 | ug/L |
| Ammonia plus Ammonium | 5 | 100 | .07 | .20 | .14 | mg/L |
| BOD, 5 day, Total Demand | 57 | 100 | 30.00 | 152.00 | 92.14 | mg/L |
| Chloroform | 5 | 100 | 1.50 | 4.50 | 3.14 | ug/L |
| DOC | 133 | 100 | 8.60 | 112.00 | 60.29 | mg/L |
| Dehydroabietic Acid | 58 | 100 | .00 | 2.60 | .59 | mg/L |
| Hydrogen ion (pH) | 131 | 100 | 5.96 | 7.66 | 7.05 | |
| Nitrate+Nitrite | 5 | 100 | .19 | .29 | .22 | mg/L |
| Specific conductance | 133 | 100 | 106.00 | 432.00 | 329.92 | usiem/cm |
| Total Kjeldahl nitrogen | 5 | 100 | .78 | 1.42 | 1.00 | mg/L |
| Total phosphorus | 5 | 100 | .05 | .12 | .08 | mg/L |
| Total suspended solids | 130 | 100 | 4.00 | 82.00 | 32.58 | mg/L |
| Zinc | 22 | 91 | .00 | 120.00 | 28.45 | ug/L |
| 1-Methylnaphthalene | 5 | 80 | .00 | 1.69 | .46 | ug/L |
| 2-Methylnaphthalene | 5 | 80 | .00 | 1.63 | .45 | ug/L |
| Copper | 5 | 80 | .00 | 11.00 | 5.20 | ug/L |
| Isopimaric Acid | 5 | 80 | .00 | .07 | .03 | mg/L |
| Naphthalene | 5 | 80 | .00 | 2.20 | .68 | ug/L |
| Pimaric Acid | 5 | 80 | .00 | .03 | .02 | mg/L |
| Styrene | 5 | 80 | .00 | 5.00 | 1.59 | ug/L |
| Vanadium | 5 | 80 | .00 | 21.00 | 9.60 | ug/L |
| m-Xylene and p-Xylene | 5 | 80 | .00 | 2.60 | .87 | ug/L |
| o-Xylene | 5 | 80 | .00 | .59 | .34 | ug/L |
| Methylene chloride | 5 | 60 | .00 | 8.40 | 2.98 | ug/L |
| Phenol | 5 | 60 | .00 | 1.50 | .66 | ug/L |
| p-Cresol | 5 | 60 | .00 | 1.00 | .40 | ug/L |
| Abietic Acid | 5 | 40 | .00 | .02 | .01 | mg/L |
| Oleic Acid | 5 | 40 | .00 | .37 | .10 | mg/L |
| m-Cresol | 5 | 40 | .00 | .70 | .24 | ug/L |
| Benzene | 5 | 20 | .00 | 1.40 | .28 | ug/L |
| Chlorodehydroabietic Acid | 5 | 20 | .00 | .01 | .00 | mg/L |
| Chromium | 5 | 20 | .00 | 5.00 | 1.00 | ug/L |
| Lead | 5 | 20 | .00 | 16.00 | 3.20 | ug/L |
| Levopimaric Acid | 5 | 20 | .00 | .05 | .01 | mg/L |
| Mercury | 5 | 20 | .00 | .21 | .04 | ug/L |
| Molybdenum | 5 | 20 | .00 | 12.00 | 2.40 | ug/L |
| Neoabietic Acid | 5 | 20 | .00 | .12 | .02 | mg/L |
| Toluene | 5 | 20 | .00 | .77 | .15 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.4
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ABITIBI-PRICE INC., THUNDER BAY DIVISION

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 5 | 100 | .03 | 1.95 | 1.02 | mg/L |
| Aluminum | 23 | 100 | 330.00 | 3,100.00 | 1,317.83 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .02 | .16 | .09 | mg/L |
| BOD, 5 day, Total Demand | 66 | 100 | 64.00 | 832.00 | 597.97 | mg/L |
| Camphene | 5 | 100 | .30 | 1.20 | .72 | ug/L |
| DOC | 146 | 100 | 66.00 | 900.00 | 601.95 | mg/L |
| Dehydroabietic Acid | 66 | 100 | .26 | 4.90 | 1.79 | mg/L |
| Hydrogen ion (pH) | 151 | 100 | 3.60 | 6.80 | 4.76 | |
| Isopimaric Acid | 5 | 100 | .22 | .65 | .38 | mg/L |
| Levopimaric Acid | 5 | 100 | .05 | .29 | .12 | mg/L |
| Neoabietic Acid | 5 | 100 | .05 | .32 | .16 | mg/L |
| Nitrate+Nitrite | 6 | 100 | .09 | .27 | .15 | mg/L |
| Oleic Acid | 5 | 100 | .01 | .54 | .14 | mg/L |
| Pimaric Acid | 5 | 100 | .07 | .17 | .11 | mg/L |
| Specific conductance | 151 | 100 | 204.00 | 940.00 | 708.42 | usiem/cm |
| Total Kjeldahl nitrogen | 6 | 100 | 1.49 | 2.80 | 1.96 | mg/L |
| Total phosphorus | 6 | 100 | .14 | .36 | .28 | mg/L |
| Total suspended solids | 151 | 100 | 8.00 | 75.00 | 36.50 | mg/L |
| Zinc | 23 | 100 | 39.00 | 560.00 | 88.96 | ug/L |
| m-Cresol | 5 | 100 | 1.40 | 29.00 | 8.32 | ug/L |
| p-Cresol | 5 | 100 | 1.11 | 73.00 | 17.18 | ug/L |
| Copper | 6 | 83 | .00 | 13.00 | 6.17 | ug/L |
| Phenol | 5 | 80 | .00 | 16.60 | 5.03 | ug/L |
| Chloroform | 5 | 60 | .00 | 8.90 | 2.94 | ug/L |
| Naphthalene | 5 | 60 | .00 | .50 | .23 | ug/L |
| Octachlorodibenzo-p-dioxin | 5 | 60 | .00 | .04 | .02 | ng/L |
| Toluene | 5 | 60 | .00 | 1.60 | .87 | ug/L |
| Benzene | 5 | 40 | .00 | 6.40 | 1.49 | ug/L |
| Chlorodehydroabietic Acid | 5 | 40 | .00 | .06 | .01 | mg/L |
| Methylene chloride | 5 | 40 | .00 | 8.90 | 2.01 | ug/L |
| Chromium | 6 | 33 | .00 | 2.00 | .67 | ug/L |
| Vanadium | 6 | 33 | .00 | 26.00 | 6.00 | ug/L |
| 1-Methylnaphthalene | 5 | 20 | .00 | .20 | .04 | ug/L |
| 2-Methylnaphthalene | 5 | 20 | .00 | .20 | .04 | ug/L |
| Chloromethane | 5 | 20 | .00 | 11.80 | 2.36 | ug/L |
| Indole | 5 | 20 | .00 | .50 | .10 | ug/L |
| Pentachlorophenol | 5 | 20 | .00 | 3.00 | .60 | ug/L |
| Styrene | 5 | 20 | .00 | .62 | .12 | ug/L |
| m-Xylene and p-Xylene | 5 | 20 | .00 | 2.40 | .48 | ug/L |
| o-Cresol | 5 | 20 | .00 | .90 | .18 | ug/L |
| o-Xylene | 5 | 20 | .00 | 2.10 | .42 | ug/L |
| Lead | 6 | 17 | .00 | 14.00 | 2.33 | ug/L |
| Mercury | 6 | 17 | .00 | .07 | .01 | ug/L |
| Molybdenum | 6 | 17 | .00 | 10.00 | 1.67 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.5
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT BEAVER WOOD FIBRE COMPANY

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 6 | 100 | .00 | .01 | .00 | ug/L |
| Aluminum | 21 | 100 | 300.00 | 1,540.00 | 651.90 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .04 | .09 | .06 | mg/L |
| BOD, 5 day, Total Demand | 62 | 100 | 62.00 | 179.00 | 131.42 | mg/L |
| Copper | 6 | 100 | 3.00 | 12.00 | 6.67 | ug/L |
| DOC | 113 | 100 | 4.70 | 100.00 | 68.27 | mg/L |
| Dehydroabietic Acid | 6 | 100 | .31 | 2.40 | 1.06 | mg/L |
| Hydrogen ion (pH) | 114 | 100 | 6.70 | 7.60 | 7.17 | |
| Isopimaric Acid | 6 | 100 | .02 | .77 | .20 | mg/L |
| Naphthalene | 6 | 100 | .20 | .70 | .40 | ug/L |
| Nitrate+Nitrite | 6 | 100 | .02 | .23 | .10 | mg/L |
| Octachlorodibenzo-p-dioxin | 1 | 100 | .04 | .04 | .04 | ng/L |
| Phenol | 6 | 100 | .40 | 25.00 | 9.83 | ug/L |
| Pimaric Acid | 6 | 100 | .02 | .13 | .06 | mg/L |
| Specific conductance | 113 | 100 | 310.00 | 450.00 | 380.08 | usiem/cm |
| Total Kjeldahl nitrogen | 6 | 100 | 1.58 | 3.40 | 2.24 | mg/L |
| Total phosphorus | 6 | 100 | .11 | .25 | .15 | mg/L |
| Total suspended solids | 113 | 100 | 7.00 | 74.00 | 41.69 | mg/L |
| Zinc | 21 | 100 | 14.00 | 50.00 | 30.29 | ug/L |
| m-Cresol | 6 | 100 | .60 | 4.30 | 2.07 | ug/L |
| Toluene | 6 | 83 | .00 | 9.10 | 3.17 | ug/L |
| 1,1-Dichloroethylene | 6 | 67 | .00 | 16.20 | 4.47 | ug/L |
| Abietic Acid | 6 | 67 | .00 | .48 | .14 | mg/L |
| Chromium | 6 | 67 | .00 | 17.00 | 4.00 | ug/L |
| Levopimaric Acid | 6 | 67 | .00 | .31 | .11 | mg/L |
| Oleic Acid | 6 | 67 | .00 | .36 | .13 | mg/L |
| Vanadium | 6 | 67 | .00 | 26.00 | 9.67 | ug/L |
| m-Xylene and p-Xylene | 6 | 67 | .00 | 2.10 | .67 | ug/L |
| p-Cresol | 6 | 67 | .00 | 2.50 | .96 | ug/L |
| 4-Chloro-3-methylphenol | 6 | 50 | .00 | 1.10 | .33 | ug/L |
| Indole | 6 | 50 | .00 | .95 | .31 | ug/L |
| Mercury | 6 | 50 | .00 | .10 | .04 | ug/L |
| Methylene chloride | 6 | 50 | .00 | 6.20 | 1.85 | ug/L |
| Nickel | 6 | 50 | .00 | 32.00 | 7.00 | ug/L |
| Pentachlorophenol | 6 | 50 | .00 | 2.40 | .72 | ug/L |
| Styrene | 6 | 50 | .00 | .91 | .34 | ug/L |
| o-Cresol | 6 | 50 | .00 | .90 | .33 | ug/L |
| Benzene | 6 | 33 | .00 | 2.60 | .63 | ug/L |
| Neoabietic Acid | 6 | 33 | .00 | .18 | .03 | mg/L |
| Trichloroethylene | 6 | 33 | .00 | 1.24 | .30 | ug/L |
| o-Xylene | 6 | 33 | .00 | 1.11 | .33 | ug/L |
| 1,1-Dichloroethane | 6 | 17 | .00 | 1.23 | .21 | ug/L |
| 1,3-Dichlorobenzene | 6 | 17 | .00 | .39 | .07 | ug/L |
| Benzo(a)pyrene | 6 | 17 | .00 | 1.00 | .17 | ug/L |
| Benzo(g,h,i)perylene | 6 | 17 | .00 | 5.00 | .83 | ug/L |
| Bromomethane | 6 | 17 | .00 | 36.00 | 6.00 | ug/L |
| Chlorodehydroabietic Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Chloromethane | 6 | 17 | .00 | 260.00 | 43.33 | ug/L |
| Dibenz(a,h)anthracene | 6 | 17 | .00 | 10.00 | 1.67 | ug/L |
| Indeno(1,2,3-cd)pyrene | 6 | 17 | .00 | 5.00 | .83 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.5 (cont'd)
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT BEAVER WOOD FIBRE COMPANY

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Lead | 6 | 17 | .00 | 15.00 | 2.50 | ug/L |
| Perylene | 6 | 17 | .00 | 1.00 | .17 | ug/L |
| Phenanthrene | 6 | 17 | .00 | .20 | .03 | ug/L |
| Silver | 6 | 17 | .00 | 2.00 | .33 | ug/L |
| Tetrachloroethylene | 6 | 17 | .00 | 1.16 | .19 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.6
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT BOISE CASCADE CANADA LTD., FORT FRANCES

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,3,5-Tetrachlorobenzene | 2 | 100 | 2.37 | 2.59 | 2.48 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 3 | 100 | .10 | .19 | .13 | ug/L |
| 2,4,5-Trichlorotoluene | 5 | 100 | .65 | 1.58 | 1.20 | ug/L |
| Adsorbable Organic Halide | 80 | 100 | 4.95 | 33.30 | 22.34 | mg/L |
| Aluminum | 26 | 100 | 325.00 | 1,865.00 | 1,079.81 | ug/L |
| Ammonia plus Ammonium | 26 | 100 | .03 | .28 | .07 | mg/L |
| BOD, 5 day, Total Demand | 79 | 100 | 33.70 | 164.30 | 108.26 | mg/L |
| COD | 181 | 100 | 402.00 | 1,008.00 | 782.86 | mg/L |
| Chloroform | 6 | 100 | 27.00 | 1,500.00 | 824.20 | ug/L |
| Chromium | 6 | 100 | 5.60 | 10.20 | 7.80 | ug/L |
| Copper | 6 | 100 | 15.00 | 27.00 | 21.83 | ug/L |
| Dehydroabietic Acid | 78 | 100 | .02 | 1.54 | .51 | mg/L |
| Dichlorodehydroabietic Ac. | 78 | 100 | .01 | .34 | .15 | mg/L |
| Hydrogen ion (pH) | 183 | 100 | 6.10 | 7.80 | 6.87 | |
| Isopimaric Acid | 5 | 100 | .09 | .52 | .27 | mg/L |
| Levopimaric Acid | 5 | 100 | .01 | .06 | .03 | mg/L |
| Molybdenum | 6 | 100 | 12.00 | 18.00 | 15.50 | ug/L |
| Specific conductance | 182 | 100 | 1,000.00 | 1,925.00 | 1,600.38 | usiem/cm |
| Sulphide | 6 | 100 | .05 | .56 | .29 | mg/L |
| Thallium | 6 | 100 | 15.00 | 30.00 | 25.83 | ug/L |
| Total Kjeldahl nitrogen | 26 | 100 | 4.75 | 13.30 | 9.09 | mg/L |
| Total phosphorus | 26 | 100 | 1.42 | 2.24 | 1.89 | mg/L |
| Total suspended solids | 183 | 100 | 55.00 | 259.00 | 132.25 | mg/L |
| VSS | 26 | 100 | 72.00 | 220.00 | 122.92 | mg/L |
| Vanadium | 6 | 100 | 2.60 | 4.80 | 3.77 | ug/L |
| Zinc | 26 | 100 | 48.20 | 214.80 | 158.64 | ug/L |
| Camphene | 6 | 83 | .00 | 12.05 | 6.51 | ug/L |
| Toluene | 6 | 83 | .00 | 31.00 | 9.60 | ug/L |
| Chlorodehydroabiatic Acid | 5 | 80 | .00 | .32 | .10 | mg/L |
| Hexachlorobenzene | 5 | 80 | .00 | .25 | .13 | ug/L |
| Pimaric Acid | 5 | 80 | .00 | .19 | .09 | mg/L |
| Total TCDF | 5 | 80 | .00 | .52 | .18 | ng/L |
| 1,2,3-Trichlorobenzene | 4 | 75 | .00 | 2.39 | .70 | ug/L |
| 2,3,5-Trichlorophenol | 6 | 67 | .00 | 9.10 | 3.77 | ug/L |
| 2,4-Dichlorophenol | 6 | 67 | .00 | 9.20 | 2.93 | ug/L |
| Abietic Acid | 6 | 67 | .00 | .25 | .09 | mg/L |
| Beryllium | 6 | 67 | .00 | 2.20 | 1.17 | ug/L |
| Neoabietic Acid | 6 | 67 | .00 | .08 | .03 | mg/L |
| o-Cresol | 6 | 67 | .00 | 23.60 | 10.13 | ug/L |
| Oleic Acid | 5 | 60 | .00 | .44 | .22 | mg/L |
| Nitrate+Nitrite | 26 | 58 | .00 | .32 | .07 | mg/L |
| Hexachlorobutadiene | 4 | 50 | .00 | .06 | .02 | ug/L |
| Nickel | 6 | 50 | .00 | 10.00 | 4.33 | ug/L |
| Octachlorodibenzo-p-dioxin | 5 | 40 | .00 | .05 | .02 | ng/L |
| Octachlorostyrene | 5 | 40 | .00 | .04 | .02 | ug/L |
| Total H6CDD | 5 | 40 | .00 | .05 | .02 | ng/L |
| 2,4,6-Trichlorophenol | 6 | 33 | .00 | 14.40 | 4.70 | ug/L |
| Methylene chloride | 6 | 33 | .00 | 5.00 | 1.25 | ug/L |
| 1,2,4-Trichlorobenzene | 4 | 25 | .00 | .21 | .05 | ug/L |
| Hexachlorocyclopentadiene | 4 | 25 | .00 | .03 | .01 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.6 (cont'd)
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT BOISE CASCADE CANADA LTD., FORT FRANCES

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Hexachloroethane | 4 | 25 | .00 | .02 | .00 | ug/L |
| 2,3,7,8 TCDD | 5 | 20 | .00 | .02 | .00 | ng/L |
| Pentachlorobenzene | 5 | 20 | .00 | .41 | .08 | ug/L |
| Total H7CDD | 5 | 20 | .00 | .21 | .04 | ng/L |
| Total PCDD | 5 | 20 | .00 | .06 | .01 | ng/L |
| Total PCDF | 5 | 20 | .00 | .02 | .00 | ng/L |
| Total TCDD | 5 | 20 | .00 | .02 | .00 | ng/L |
| 2,3,4,5-Tetrachlorophenol | 6 | 17 | .00 | 4.10 | .68 | ug/L |
| 2,6-Dichlorophenol | 6 | 17 | .00 | .70 | .12 | ug/L |
| Cadmium | 6 | 17 | .00 | 2.00 | .33 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.7
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT BOISE CASCADE CANADA LTD., KENORA

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | 5 | 100 | .03 | .17 | .12 | ug/L |
| 1,2,4-Trichlorobenzene | 4 | 100 | .06 | .14 | .10 | ug/L |
| 2,4,5-Trichlorotoluene | 2 | 100 | .04 | 1.02 | .53 | ug/L |
| Abietic Acid | 5 | 100 | 3.16 | 6.98 | 5.20 | mg/L |
| Aluminum | 26 | 100 | 210.00 | 865.00 | 408.92 | ug/L |
| BOD, 5 day, Total Demand | 78 | 100 | 184.40 | 886.80 | 563.18 | mg/L |
| COD | 177 | 100 | 932.00 | 3,048.00 | 1,746.41 | mg/L |
| Chromium | 6 | 100 | 1.80 | 34.40 | 9.87 | ug/L |
| Copper | 6 | 100 | 12.00 | 16.00 | 13.83 | ug/L |
| Dehydroabietic Acid | 75 | 100 | 1.32 | 7.23 | 4.24 | mg/L |
| Hydrogen ion (pH) | 180 | 100 | 3.10 | 6.94 | 4.67 | |
| Isopimaric Acid | 5 | 100 | 3.07 | 6.89 | 4.93 | mg/L |
| Neoabietic Acid | 5 | 100 | .86 | 1.99 | 1.45 | mg/L |
| Oleic Acid | 5 | 100 | .57 | 1.59 | 1.09 | mg/L |
| Pimaric Acid | 5 | 100 | .72 | 1.38 | 1.00 | mg/L |
| Specific conductance | 181 | 100 | 430.00 | 1,390.00 | 916.50 | usiem/cm |
| Total Kjaldahl nitrogen | 6 | 100 | .55 | 2.45 | 1.77 | mg/L |
| Total phosphorus | 6 | 100 | .28 | .40 | .33 | mg/L |
| Total suspended solids | 182 | 100 | 34.00 | 119.00 | 60.85 | mg/L |
| Zinc | 26 | 100 | 34.00 | 144.60 | 51.62 | ug/L |
| Chlorodehydroabietic Acid | 6 | 83 | .00 | .25 | .11 | mg/L |
| Molybdenum | 6 | 83 | .00 | 5.00 | 3.33 | ug/L |
| Nitrate+Nitrite | 6 | 83 | .00 | .45 | .13 | mg/L |
| Levopimaric Acid | 4 | 75 | .00 | 1.33 | .69 | mg/L |
| Beryllium | 6 | 67 | .00 | 3.40 | 1.50 | ug/L |
| Chloroform | 6 | 67 | .00 | 14.40 | 7.97 | ug/L |
| Octachlorodibenzo-p-dioxin | 3 | 67 | .00 | .19 | .08 | ng/L |
| 1,2,3,5-Tetrachlorobenzene | 2 | 50 | .00 | .25 | .12 | ug/L |
| Ammonia plus Ammonium | 6 | 50 | .00 | .11 | .03 | mg/L |
| PCBT | 2 | 50 | .00 | .05 | .03 | ug/L |
| Octachlorostyrene | 5 | 40 | .00 | .02 | .01 | ug/L |
| Camphene | 6 | 33 | .00 | 1.40 | .46 | ug/L |
| Cis-1,3-Dichloropropylene | 6 | 33 | .00 | 4.00 | .75 | ug/L |
| Octachlorodibenzofuran | 3 | 33 | .00 | .03 | .01 | ng/L |
| Phenol | 6 | 33 | .00 | 5.75 | 1.11 | ug/L |
| Vanadium | 6 | 33 | .00 | 2.00 | .63 | ug/L |
| Pentachlorobenzene | 5 | 20 | .00 | .06 | .01 | ug/L |
| 1,1,2,2-Tetrachloroethane | 6 | 17 | .00 | .60 | .10 | ug/L |
| 1,1,2-Trichloroethane | 6 | 17 | .00 | .57 | .09 | ug/L |
| 1,1-Dichloroethane | 6 | 17 | .00 | .33 | .06 | ug/L |
| 1,1-Dichloroethylene | 6 | 17 | .00 | .85 | .14 | ug/L |
| 1,2-Dichlorobenzene | 6 | 17 | .00 | .42 | .07 | ug/L |
| 1,2-Dichloroethane | 6 | 17 | .00 | .48 | .08 | ug/L |
| 1,2-Dichloropropane | 6 | 17 | .00 | .61 | .10 | ug/L |
| 1,3-Dichlorobenzene | 6 | 17 | .00 | .19 | .03 | ug/L |
| 1,4-Dichlorobenzene | 6 | 17 | .00 | .30 | .05 | ug/L |
| Benzene | 6 | 17 | .00 | .36 | .06 | ug/L |
| Bromodichloromethane | 6 | 17 | .00 | .95 | .16 | ug/L |
| Bromoform | 6 | 17 | .00 | 1.40 | .23 | ug/L |
| Bromomethane | 6 | 17 | .00 | 2.58 | .43 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.7 (cont'd)
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT BOISE CASCADE CANADA LTD., KENORA

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Carbon tetrachloride | 6 | 17 | .00 | 1.16 | .19 | ug/L |
| Chlorobenzene | 6 | 17 | .00 | .38 | .06 | ug/L |
| Chloromethane | 6 | 17 | .00 | 1.87 | .31 | ug/L |
| Dibromochloromethane | 6 | 17 | .00 | .85 | .14 | ug/L |
| Ethylene dibromide | 6 | 17 | .00 | .69 | .12 | ug/L |
| Hexachloroethane | 6 | 17 | .00 | .01 | .00 | ug/L |
| Methylene chloride | 6 | 17 | .00 | 1.27 | .21 | ug/L |
| Styrene | 6 | 17 | .00 | .25 | .04 | ug/L |
| Tetrachloroethylene | 6 | 17 | .00 | .87 | .15 | ug/L |
| Toluene | 6 | 17 | .00 | .47 | .08 | ug/L |
| Trans-1,2-Dichloroethylene | 6 | 17 | .00 | .65 | .11 | ug/L |
| Trans-1,3-Dichloropropylene | 6 | 17 | .00 | .41 | .07 | ug/L |
| Trichloroethylene | 6 | 17 | .00 | .80 | .13 | ug/L |
| Trichlorofluoromethane | 6 | 17 | .00 | .22 | .04 | ug/L |
| Vinyl chloride | 6 | 17 | .00 | 2.39 | .40 | ug/L |
| m-Cresol | 6 | 17 | .00 | 10.40 | 1.73 | ug/L |
| m-Xylene and p-Xylene | 6 | 17 | .00 | .50 | .08 | ug/L |
| o-Cresol | 6 | 17 | .00 | .20 | .03 | ug/L |
| o-Xylene | 6 | 17 | .00 | .26 | .04 | ug/L |
| p-Cresol | 6 | 17 | .00 | 10.40 | 1.73 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.8
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT CANADIAN PACIFIC FOREST PRODUCTS LTD., DRYDEN

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | 3 | 100 | .40 | .86 | .58 | ug/L |
| 2,3,5-Trichlorophenol | 6 | 100 | 3.30 | 20.40 | 11.22 | ug/L |
| Adsorbable Organic Halide | 80 | 100 | 1.32 | 31.00 | 17.92 | mg/L |
| Aluminum | 32 | 100 | 440.00 | 3,080.00 | 1,535.47 | ug/L |
| BOD, 5 day, Total Demand | 80 | 100 | 8.00 | 65.00 | 27.93 | mg/L |
| COD | 179 | 100 | 200.00 | 770.00 | 480.50 | mg/L |
| Chloroform | 5 | 100 | 3.00 | 258.80 | 114.24 | ug/L |
| Dehydroabietic Acid | 80 | 100 | .00 | 2.80 | .09 | mg/L |
| Dichlorodehydroabietic Ac. | 80 | 100 | .00 | .07 | .02 | mg/L |
| Hydrogen ion (pH) | 179 | 100 | 6.54 | 7.77 | 7.24 | |
| Molybdenum | 6 | 100 | 4.00 | 25.00 | 17.83 | ug/L |
| Nitrate+Nitrite | 27 | 100 | 2.43 | 28.99 | 16.16 | mg/L |
| Octachlorostyrene | 2 | 100 | .07 | .40 | .23 | ug/L |
| Specific conductance | 179 | 100 | 860.00 | 2,740.00 | 1,579.31 | usiem/cm |
| Thallium | 6 | 100 | 15.00 | 30.00 | 24.17 | ug/L |
| Total Kjeldahl nitrogen | 27 | 100 | .42 | 5.04 | 2.05 | mg/L |
| Total phosphorus | 6 | 100 | .20 | 1.60 | .53 | mg/L |
| Total suspended solids | 179 | 100 | 16.00 | 86.80 | 52.03 | mg/L |
| VSS | 27 | 100 | 6.80 | 75.20 | 47.91 | mg/L |
| Zinc | 32 | 100 | 27.00 | 310.00 | 128.36 | ug/L |
| Ammonia plus Ammonium | 27 | 93 | .00 | 2.24 | .80 | mg/L |
| 2,4-Dichlorophenol | 6 | 83 | .00 | 7.60 | 3.78 | ug/L |
| Oleic Acid | 6 | 83 | .00 | .17 | .05 | mg/L |
| Sulphide | 6 | 83 | .00 | .13 | .05 | mg/L |
| Hexachlorobutadiene | 5 | 80 | .00 | .07 | .03 | ug/L |
| Chlorodehydroabietic Acid | 6 | 67 | .00 | .05 | .02 | mg/L |
| Lead | 6 | 67 | .00 | 16.00 | 7.00 | ug/L |
| Total TCDF | 6 | 67 | .00 | .15 | .05 | ng/L |
| 2,4,5-Trichlorotoluene | 2 | 50 | .00 | 1.17 | .58 | ug/L |
| Beryllium | 6 | 50 | .00 | 2.00 | .90 | ug/L |
| Abietic Acid | 6 | 33 | .00 | .02 | .01 | mg/L |
| Copper | 6 | 33 | .00 | 15.00 | 3.50 | ug/L |
| Hexachlorobenzene | 3 | 33 | .00 | .19 | .06 | ug/L |
| Hexachlorocyclopentadiene | 6 | 33 | .00 | .03 | .01 | ug/L |
| Isopimaric Acid | 6 | 33 | .00 | .02 | .00 | mg/L |
| Levopimaric Acid | 6 | 33 | .00 | .01 | .00 | mg/L |
| Pentachlorobenzene | 3 | 33 | .00 | .07 | .02 | ug/L |
| 1,2,3,5-Tetrachlorobenzene | 4 | 25 | .00 | 1.10 | .27 | ug/L |
| Hexachloroethane | 4 | 25 | .00 | .02 | .01 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 5 | 20 | .00 | .13 | .03 | ug/L |
| 1,2,4-Trichlorobenzene | 5 | 20 | .00 | .13 | .03 | ug/L |
| Toluene | 5 | 20 | .00 | 3.60 | .72 | ug/L |
| Neoabietic Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Nickel | 6 | 17 | .00 | 8.00 | 1.33 | ug/L |
| Octachlorodibenzo-p-dioxin | 6 | 17 | .00 | .03 | .00 | ng/L |
| Octachlorodibenzofuran | 6 | 17 | .00 | .03 | .01 | ng/L |
| Pimaric Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Vanadium | 6 | 17 | .00 | 2.60 | .43 | ug/L |
| o-Cresol | 6 | 17 | .00 | 1.75 | .29 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.9

PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT CANADIAN PACIFIC FOREST PRODUCTS LTD., THUNDER BAY

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | 3 | 100 | .45 | .68 | .55 | ug/L |
| 2,4,5-Trichlorotoluene | 4 | 100 | 1.16 | 4.39 | 2.80 | ug/L |
| Abiatic Acid | 4 | 100 | .59 | 1.75 | 1.06 | mg/L |
| Adsorbable Organic Halide | 45 | 100 | 3.33 | 34.28 | 23.18 | mg/L |
| Aluminum | 14 | 100 | 2,390.00 | 7,310.00 | 3,838.57 | ug/L |
| BOD, 5 day, Total Demand | 43 | 100 | 130.00 | 379.00 | 269.60 | mg/L |
| COD | 98 | 100 | 685.00 | 1,294.00 | 951.76 | mg/L |
| Chlorodehydroabietic Acid | 4 | 100 | .18 | .62 | .37 | mg/L |
| Chloroform | 4 | 100 | 1,557.80 | 1,884.00 | 1,695.20 | ug/L |
| Chromium | 4 | 100 | 37.60 | 68.20 | 48.80 | ug/L |
| Copper | 4 | 100 | 18.00 | 21.00 | 19.25 | ug/L |
| Dehydroabietic Acid | 43 | 100 | .92 | 8.46 | 1.78 | mg/L |
| Dichlorodehydroabietic Ac. | 42 | 100 | .01 | .84 | .08 | mg/L |
| Hexachlorobenzene | 2 | 100 | .31 | .53 | .42 | ug/L |
| Hydrogen ion (pH) | 99 | 100 | 5.91 | 7.65 | 6.45 | |
| Isopimaric Acid | 4 | 100 | .79 | 1.77 | 1.16 | mg/L |
| Levopimaric Acid | 3 | 100 | .01 | .23 | .12 | mg/L |
| Molybdenum | 4 | 100 | 7.00 | 11.50 | 9.75 | ug/L |
| Neoabietic Acid | 4 | 100 | .14 | .44 | .26 | mg/L |
| Oleic Acid | 4 | 100 | .19 | .76 | .37 | mg/L |
| Phenol | 4 | 100 | 14.05 | 50.55 | 24.56 | ug/L |
| Pimaric Acid | 4 | 100 | .11 | .36 | .20 | mg/L |
| Specific conductance | 100 | 100 | 938.00 | 2,420.00 | 1,516.48 | usiem/cm |
| Total Kjeldahl nitrogen | 15 | 100 | .95 | 2.95 | 1.51 | mg/L |
| Total phosphorus | 15 | 100 | .48 | .82 | .64 | mg/L |
| Total suspended solids | 100 | 100 | 34.40 | 162.00 | 76.63 | mg/L |
| Vanadium | 4 | 100 | 3.60 | 5.60 | 4.65 | ug/L |
| Zinc | 14 | 100 | 90.00 | 240.00 | 124.00 | ug/L |
| Ammonia plus Ammonium | 15 | 87 | .00 | .28 | .10 | mg/L |
| 2,4-Dichlorophenol | 4 | 75 | .00 | 6.30 | 3.65 | ug/L |
| Beryllium | 4 | 75 | .00 | 3.00 | 1.70 | ug/L |
| Nickel | 4 | 75 | .00 | 8.00 | 6.00 | ug/L |
| Sulphide | 4 | 75 | .00 | .31 | .10 | mg/L |
| Thallium | 4 | 75 | .00 | 25.00 | 15.00 | ug/L |
| Total TCDF | 4 | 75 | .00 | .12 | .04 | ng/L |
| 1,2,3,5-Tetrachlorobenzene | 2 | 50 | .00 | 4.50 | 2.25 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 2 | 50 | .00 | .61 | .31 | ug/L |
| 2,4,6-Trichlorophenol | 4 | 50 | .00 | 15.20 | 5.62 | ug/L |
| 2,4-Dimethylphenol | 4 | 50 | .00 | 2.00 | .95 | ug/L |
| Toluene | 4 | 50 | .00 | 3.00 | 1.50 | ug/L |
| Total TCDD | 4 | 50 | .00 | .05 | .02 | ng/L |
| 1,2,4-Trichlorobenzene | 3 | 33 | .00 | 2.08 | .69 | ug/L |
| Hexachlorobutadiene | 3 | 33 | .00 | .01 | .00 | ug/L |
| Hexachloroethane | 3 | 33 | .00 | .05 | .02 | ug/L |
| Octachlorostyrene | 3 | 33 | .00 | .13 | .04 | ug/L |
| 1,2,3,4-Tetrachlorobenzene | 4 | 25 | .00 | .08 | .02 | ug/L |
| 2,3,5-Trichlorophenol | 4 | 25 | .00 | 12.00 | 3.00 | ug/L |
| Camphene | 4 | 25 | .00 | .60 | .15 | ug/L |
| m-Cresol | 4 | 25 | .00 | 1.60 | .40 | ug/L |
| o-Cresol | 4 | 25 | .00 | 3.65 | .91 | ug/L |
| p-Cresol | 4 | 25 | .00 | 1.60 | .40 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT
NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.10

PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT DOMTAR INC., FINE PAPERS DIVISION (CORNWALL)

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 6 | 100 | .09 | .38 | .21 | mg/L |
| Adsorbable Organic Halide | 78 | 100 | .04 | 5.90 | 3.45 | mg/L |
| Aluminum | 26 | 100 | 890.00 | 8,590.00 | 1,842.69 | ug/L |
| BOD, 5 day, Total Demand | 74 | 100 | 57.00 | 222.00 | 149.68 | mg/L |
| Benzene | 6 | 100 | 5.80 | 33.20 | 12.97 | ug/L |
| COD | 179 | 100 | 185.00 | 789.00 | 424.96 | mg/L |
| Chlorodehydroabietic Acid | 6 | 100 | .02 | .08 | .04 | mg/L |
| Chloroform | 6 | 100 | 182.00 | 348.00 | 240.50 | ug/L |
| Dehydroabietic Acid | 78 | 100 | .17 | 1.26 | .47 | mg/L |
| Hydrogen ion (pH) | 179 | 100 | 6.11 | 9.30 | 7.27 | |
| Nitrate+Nitrite | 6 | 100 | .05 | .99 | .32 | mg/L |
| Octachlorodibenzo-p-dioxin | 5 | 100 | .06 | .31 | .14 | ng/L |
| Oleic Acid | 6 | 100 | .08 | .19 | .14 | mg/L |
| Phenanthrene | 6 | 100 | 6.20 | 24.20 | 11.92 | ug/L |
| Phenol | 6 | 100 | 65.60 | 143.00 | 98.85 | ug/L |
| Specific conductance | 179 | 100 | 484.00 | 1,405.00 | 1,056.02 | usiem/cm |
| Sulphide | 6 | 100 | .09 | .75 | .39 | mg/L |
| Total Kjeldahl nitrogen | 6 | 100 | 2.80 | 6.00 | 3.82 | mg/L |
| Total TCDF | 5 | 100 | .02 | .08 | .05 | ng/L |
| Total phosphorus | 6 | 100 | .23 | .50 | .34 | mg/L |
| Total suspended solids | 178 | 100 | 39.00 | 152.00 | 72.06 | mg/L |
| Zinc | 26 | 100 | 20.00 | 70.00 | 44.62 | ug/L |
| Ammonia plus Ammonium | 6 | 67 | .00 | 1.48 | .30 | mg/L |
| Fluoranthene | 6 | 67 | .00 | 9.80 | 3.37 | ug/L |
| Isopimaric Acid | 6 | 67 | .00 | .04 | .01 | mg/L |
| Levopimaric Acid | 3 | 67 | .00 | .04 | .02 | mg/L |
| Neoabietic Acid | 6 | 67 | .00 | .18 | .08 | mg/L |
| Toluene | 6 | 67 | .00 | 13.00 | 5.50 | ug/L |
| Acenaphthylene | 6 | 50 | .00 | 6.30 | 2.62 | ug/L |
| Copper | 6 | 50 | .00 | 30.00 | 10.00 | ug/L |
| Naphthalene | 6 | 50 | .00 | 10.50 | 4.48 | ug/L |
| Pyrene | 6 | 50 | .00 | 4.90 | 1.42 | ug/L |
| o-Cresol | 6 | 50 | .00 | 7.10 | 3.03 | ug/L |
| 1,2,3,5-Tetrachlorobenzene | 6 | 33 | .00 | .01 | .00 | ug/L |
| Chrysene | 6 | 33 | .00 | 2.80 | .88 | ug/L |
| Pimaric Acid | 6 | 33 | .00 | .01 | .00 | mg/L |
| Total H6CDD | 5 | 20 | .00 | .10 | .02 | ng/L |
| Total H7CDD | 5 | 20 | .00 | .10 | .02 | ng/L |
| Dichlorodehydroabietic Ac. | 78 | 19 | .00 | .10 | .01 | mg/L |
| 1,2,4,5-Tetrachlorobenzene | 6 | 17 | .00 | .02 | .00 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 17 | .00 | .01 | .00 | ug/L |
| Anthracene | 6 | 17 | .00 | 2.50 | .42 | ug/L |
| Benz(a)anthracene | 6 | 17 | .00 | 1.90 | .32 | ug/L |
| Benzo(a)pyrene | 6 | 17 | .00 | .70 | .12 | ug/L |
| Benzo(b)fluoranthene | 6 | 17 | .00 | 1.80 | .30 | ug/L |
| Benzo(k)fluoranthene | 6 | 17 | .00 | 1.80 | .30 | ug/L |
| Fluorene | 6 | 17 | .00 | 1.30 | .22 | ug/L |
| Mercury | 6 | 17 | .00 | .15 | .02 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.11
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT DOMTAR INC., CONTAINERBOARD DIVISION (RED ROCK)

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 6 | 100 | .43 | .79 | .66 | mg/L |
| Adsorbable Organic Halide | 78 | 100 | .04 | 2.80 | 1.73 | mg/L |
| Aluminum | 26 | 100 | 1,550.00 | 3,550.00 | 2,582.31 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .20 | .48 | .39 | mg/L |
| BOD, 5 day, Total Demand | 78 | 100 | 89.00 | 235.00 | 150.26 | mg/L |
| COD | 177 | 100 | 234.00 | 752.00 | 401.54 | mg/L |
| Chloroform | 6 | 100 | 102.00 | 164.00 | 128.17 | ug/L |
| Dehydroabietic Acid | 78 | 100 | .45 | 2.48 | 1.03 | mg/L |
| Hydrogen ion (pH) | 180 | 100 | 6.94 | 10.16 | 8.11 | |
| Isopimaric Acid | 6 | 100 | .13 | .27 | .20 | mg/L |
| Neoabietic Acid | 6 | 100 | .41 | 1.90 | 1.03 | mg/L |
| Octachlorodibenzo-p-dioxin | 6 | 100 | .13 | 1.40 | .41 | ng/L |
| Specific conductance | 180 | 100 | 345.00 | 2,100.00 | 633.62 | usiem/cm |
| Sulphide | 6 | 100 | .02 | .44 | .16 | mg/L |
| Total Kjeldahl nitrogen | 6 | 100 | 1.30 | 2.20 | 1.77 | mg/L |
| Total phosphorus | 6 | 100 | .18 | .46 | .24 | mg/L |
| Total suspended solids | 180 | 100 | 37.00 | 185.00 | 58.66 | mg/L |
| Zinc | 26 | 100 | 20.00 | 100.00 | 35.38 | ug/L |
| Oleic Acid | 6 | 83 | .00 | .08 | .05 | mg/L |
| Phenol | 6 | 83 | .00 | 23.10 | 14.62 | ug/L |
| Pimaric Acid | 6 | 83 | .00 | .11 | .07 | mg/L |
| Nitrate+Nitrite | 6 | 33 | .00 | .30 | .07 | mg/L |
| 1,2,4,5-Tetrachlorobenzene | 6 | 17 | .00 | .03 | .00 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 17 | .00 | .05 | .01 | ug/L |
| 2,4,5-Trichlorophenol | 6 | 17 | .00 | 7.30 | 1.22 | ug/L |
| Chlorodehydroabietic Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Copper | 6 | 17 | .00 | 10.00 | 1.67 | ug/L |
| Dichlorodehydroabietic Ac. | 78 | 4 | .00 | .02 | .00 | mg/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.12

PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT DOMTAR INC., FINE PAPERS DIVISION (ST. CATHARINES)

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 25 | 100 | 460.00 | 2,400.00 | 1,068.00 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .04 | .12 | .07 | mg/L |
| BOD, 5 day, Total Demand | 80 | 100 | 35.00 | 191.00 | 89.59 | mg/L |
| COD | 178 | 100 | 50.00 | 850.00 | 265.13 | mg/L |
| Dehydroabietic Acid | 6 | 100 | .24 | 2.00 | 1.03 | mg/L |
| Hydrogen ion (pH) | 177 | 100 | 6.40 | 8.60 | 7.09 | |
| Isopimaric Acid | 6 | 100 | .01 | .10 | .05 | mg/L |
| Levopimaric Acid | 6 | 100 | .02 | .10 | .06 | mg/L |
| Nitrate+Nitrite | 6 | 100 | .09 | .41 | .22 | mg/L |
| Octachlorodibenzo-p-dioxin | 3 | 100 | .06 | .70 | .28 | ng/L |
| Specific conductance | 178 | 100 | 200.00 | 611.00 | 401.56 | usiem/cm |
| Total Kjeldahl nitrogen | 5 | 100 | .95 | 3.50 | 1.89 | mg/L |
| Total phosphorus | 6 | 100 | .02 | .04 | .03 | mg/L |
| Total suspended solids | 178 | 100 | 5.00 | 551.00 | 35.05 | mg/L |
| Zinc | 25 | 96 | .00 | 35.00 | 17.56 | ug/L |
| Nickel | 6 | 83 | .00 | 21.00 | 7.67 | ug/L |
| Abietic Acid | 6 | 67 | .00 | .45 | .13 | mg/L |
| Copper | 6 | 67 | .00 | 16.00 | 7.83 | ug/L |
| Phenol | 6 | 67 | .00 | 2.30 | 1.17 | ug/L |
| Pimaric Acid | 6 | 67 | .00 | .08 | .03 | mg/L |
| Toluene | 6 | 67 | .00 | 2.10 | .53 | ug/L |
| o-Xylene | 6 | 67 | .00 | .87 | .36 | ug/L |
| Bromodichloromethane | 6 | 50 | .00 | .85 | .27 | ug/L |
| Chlorodehydroabietic Acid | 6 | 50 | .00 | .09 | .02 | mg/L |
| Chloroform | 6 | 50 | .00 | 2.80 | .69 | ug/L |
| Methylene chloride | 6 | 50 | .00 | 21.00 | 4.48 | ug/L |
| Naphthalene | 6 | 50 | .00 | .30 | .12 | ug/L |
| Vanadium | 6 | 50 | .00 | 28.00 | 6.17 | ug/L |
| m-Xylene and p-Xylene | 6 | 50 | .00 | 1.41 | .55 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 33 | .00 | .01 | .00 | ug/L |
| Benzene | 6 | 33 | .00 | 2.60 | .85 | ug/L |
| Chromium | 6 | 33 | .00 | 4.00 | 1.17 | ug/L |
| Oleic Acid | 6 | 33 | .00 | .55 | .11 | mg/L |
| Total H7CDD | 4 | 25 | .00 | .04 | .01 | ng/L |
| Total TCDF | 4 | 25 | .00 | .03 | .01 | ng/L |
| 1,2-Dichlorobenzene | 6 | 17 | .00 | .24 | .04 | ug/L |
| 2,4,6-Trichlorophenol | 6 | 17 | .00 | 5.60 | .93 | ug/L |
| 2,4-Dichlorophenol | 6 | 17 | .00 | 3.80 | .63 | ug/L |
| 2,4-Dimethylphenol | 6 | 17 | .00 | .50 | .08 | ug/L |
| 2-Chlorophenol | 6 | 17 | .00 | .80 | .13 | ug/L |
| Bromomethane | 6 | 17 | .00 | 13.40 | 2.23 | ug/L |
| Neoabietic Acid | 6 | 17 | .00 | .02 | .00 | mg/L |
| Styrene | 6 | 17 | .00 | .60 | .10 | ug/L |
| m-Cresol | 6 | 17 | .00 | 16.20 | 2.70 | ug/L |
| o-Cresol | 6 | 17 | .00 | .90 | .15 | ug/L |
| p-Cresol | 6 | 17 | .00 | 1.40 | .23 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.13
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT DOMTAR INC., CONTAINERBOARD DIVISION (TRENTON)

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 6 | 100 | .50 | .84 | .63 | mg/L |
| Aluminum | 27 | 100 | 1,960.00 | 4,630.00 | 3,141.85 | ug/L |
| BOD, 5 day, Total Demand | 74 | 100 | 350.00 | 2,850.00 | 1,258.18 | mg/L |
| COD | 178 | 100 | 1,215.00 | 6,600.00 | 3,388.60 | mg/L |
| Copper | 6 | 100 | 20.00 | 60.00 | 43.33 | ug/L |
| Dehydroabietic Acid | 80 | 100 | .64 | 2.74 | 1.20 | mg/L |
| Hydrogen ion (pH) | 178 | 100 | 7.30 | 9.60 | 7.96 | |
| Isopimaric Acid | 6 | 100 | .21 | .36 | .27 | mg/L |
| Neoabietic Acid | 6 | 100 | .55 | 1.82 | 1.03 | mg/L |
| Nitrate+Nitrite | 6 | 100 | .43 | 1.40 | .81 | mg/L |
| Octachlorodibenzo-p-dioxin | 1 | 100 | 6.80 | 6.80 | 6.80 | ng/L |
| Octachlorodibenzofuran | 1 | 100 | .75 | .75 | .75 | ng/L |
| Oleic Acid | 6 | 100 | .32 | .63 | .42 | mg/L |
| Phenol | 6 | 100 | 3.30 | 846.00 | 446.22 | ug/L |
| Specific conductance | 178 | 100 | 700.00 | 2,450.00 | 1,153.63 | usiem/cm |
| Total H6CDD | 1 | 100 | .29 | .29 | .29 | ng/L |
| Total H7CDD | 1 | 100 | 1.00 | 1.00 | 1.00 | ng/L |
| Total H7CDF | 1 | 100 | .35 | .35 | .35 | ng/L |
| Total Kjeldahl nitrogen | 6 | 100 | 6.20 | 12.40 | 9.68 | mg/L |
| Total TCDF | 1 | 100 | .10 | .10 | .10 | ng/L |
| Total phosphorus | 6 | 100 | 1.00 | 1.70 | 1.32 | mg/L |
| Total suspended solids | 178 | 100 | 50.00 | 700.00 | 166.12 | mg/L |
| Zinc | 27 | 100 | 90.00 | 350.00 | 183.70 | ug/L |
| o-Cresol | 6 | 100 | 1.50 | 11.90 | 7.85 | ug/L |
| Ammonia plus Ammonium | 6 | 83 | .00 | .94 | .47 | mg/L |
| Cadmium | 6 | 83 | .00 | 5.00 | 3.17 | ug/L |
| Chlorodehydroabietic Acid | 6 | 83 | .00 | .09 | .03 | mg/L |
| Pimaric Acid | 6 | 83 | .00 | .22 | .13 | mg/L |
| Chloroform | 6 | 67 | .00 | 9.10 | 2.72 | ug/L |
| Levopimaric Acid | 3 | 33 | .00 | .01 | .00 | mg/L |
| Acenaphthylene | 6 | 17 | .00 | 1.80 | .30 | ug/L |
| Chromium | 6 | 17 | .00 | 20.00 | 3.33 | ug/L |
| Fluoranthene | 6 | 17 | .00 | 1.00 | .17 | ug/L |
| Fluorene | 6 | 17 | .00 | 3.40 | .57 | ug/L |
| Naphthalene | 6 | 17 | .00 | 3.10 | .52 | ug/L |
| Phenanthrene | 6 | 17 | .00 | 11.40 | 1.90 | ug/L |
| Pyrene | 6 | 17 | .00 | .40 | .07 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.14
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT E.B. EDDY FOREST PRODUCTS LTD., ESPANOLA

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 2,4,6-Trichlorophenol | 6 | 100 | .80 | 7.00 | 4.05 | ug/L |
| Adsorbable Organic Halide | 79 | 100 | 1.22 | 11.68 | 7.95 | mg/L |
| Aluminum | 31 | 100 | 70.00 | 1,180.00 | 600.32 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .04 | 1.98 | 1.01 | mg/L |
| BOD, 5 day, Total Demand | 81 | 100 | 3.00 | 78.00 | 16.29 | mg/L |
| Chloroform | 6 | 100 | 5.50 | 32.00 | 15.80 | ug/L |
| DOC | 184 | 100 | 9.19 | 156.60 | 109.49 | mg/L |
| Hydrogen ion (pH) | 184 | 100 | 6.80 | 7.80 | 7.62 | |
| Nickel | 6 | 100 | 9.00 | 64.00 | 26.00 | ug/L |
| Nitrate+Nitrite | 6 | 100 | .02 | .42 | .17 | mg/L |
| Specific conductance | 184 | 100 | 132.00 | 1,800.00 | 1,386.72 | usiem/cm |
| Sulphide | 6 | 100 | .05 | .96 | .23 | mg/L |
| Total Kjeldahl nitrogen | 6 | 100 | 2.00 | 5.80 | 3.85 | mg/L |
| Total phosphorus | 6 | 100 | .44 | .69 | .52 | mg/L |
| Total suspended solids | 184 | 100 | .00 | 55.00 | 20.77 | mg/L |
| Zinc | 31 | 97 | .00 | 180.00 | 79.58 | ug/L |
| VSS | 28 | 93 | .00 | 27.00 | 12.57 | mg/L |
| 2,4-Dichlorophenol | 6 | 67 | .00 | 1.70 | .73 | ug/L |
| Benzene | 6 | 67 | .00 | 16.10 | 3.87 | ug/L |
| Total TCDF | 5 | 60 | .00 | .08 | .03 | ng/L |
| Copper | 6 | 50 | .00 | 9.00 | 3.17 | ug/L |
| Oehydroabietic Acid | 83 | 36 | .00 | .57 | .03 | mg/L |
| 1,2,4-Trichlorobenzene | 6 | 33 | .00 | .03 | .01 | ug/L |
| Cadmium | 6 | 33 | .00 | 2.00 | .50 | ug/L |
| Chromium | 6 | 33 | .00 | 8.00 | 2.33 | ug/L |
| Methylene chloride | 6 | 33 | .00 | 5.80 | 1.73 | ug/L |
| Phenol | 6 | 33 | .00 | .80 | .18 | ug/L |
| Toluene | 6 | 33 | .00 | 2.40 | .69 | ug/L |
| Vanadium | 6 | 33 | .00 | 30.00 | 6.67 | ug/L |
| m-Xylene and p-Xylene | 6 | 33 | .00 | .80 | .21 | ug/L |
| o-Xylene | 6 | 33 | .00 | .52 | .17 | ug/L |
| 2,4-Dimethylphenol | 6 | 17 | .00 | .30 | .05 | ug/L |
| 4,6-Dinitro-o-cresol | 6 | 17 | .00 | 80.00 | 13.33 | ug/L |
| Abietic Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Chlorodehydroabietic Acid | 6 | 17 | .00 | .02 | .00 | mg/L |
| Chloromethane | 6 | 17 | .00 | 17.40 | 2.90 | ug/L |
| Isopimaric Acid | 6 | 17 | .00 | .03 | .01 | mg/L |
| Mercury | 6 | 17 | .00 | .15 | .02 | ug/L |
| Phenanthrene | 6 | 17 | .00 | .20 | .03 | ug/L |
| Pimaric Acid | 6 | 17 | .00 | .02 | .00 | mg/L |
| Silver | 6 | 17 | .00 | 1.80 | .30 | ug/L |
| Styrene | 6 | 17 | .00 | 1.11 | .19 | ug/L |
| Total PCDF | 6 | 17 | .00 | .13 | .02 | ng/L |
| m-Cresol | 6 | 17 | .00 | 1.60 | .27 | ug/L |
| o-Cresol | 6 | 17 | .00 | 4.00 | .67 | ug/L |
| p-Cresol | 6 | 17 | .00 | .80 | .13 | ug/L |
| Dichlorodehydroabietic Ac. | 83 | 2 | .00 | .03 | .00 | mg/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.15
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT E.B. EDDY FOREST PRODUCTS LTD., OTTAWA

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 29 | 100 | 820.00 | 7,300.00 | 3,148.28 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .02 | .40 | .17 | mg/L |
| BOD, 5 day, Total Demand | 78 | 100 | 35.00 | 378.00 | 156.91 | mg/L |
| COD | 171 | 100 | 94.00 | 591.00 | 357.65 | mg/L |
| Copper | 6 | 100 | 4.00 | 14.00 | 9.17 | ug/L |
| Hydrogen ion (pH) | 171 | 100 | 4.66 | 10.66 | 7.20 | |
| Nitrate+Nitrite | 6 | 100 | .04 | .39 | .25 | mg/L |
| Phenol | 5 | 100 | .80 | 4.50 | 2.19 | ug/L |
| Specific conductance | 171 | 100 | 169.00 | 715.00 | 371.08 | usiem/cm |
| Total Kjeldahl nitrogen | 6 | 100 | .85 | 5.50 | 3.17 | mg/L |
| Total phosphorus | 6 | 100 | .03 | .29 | .08 | mg/L |
| Total suspended solids | 171 | 100 | 16.70 | 130.40 | 47.51 | mg/L |
| Zinc | 29 | 97 | .00 | 103.00 | 21.93 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 67 | .00 | .05 | .02 | ug/L |
| Chloroform | 6 | 67 | .00 | 10.90 | 3.91 | ug/L |
| Dehydroabietic Acid | 6 | 67 | .00 | 2.10 | .43 | mg/L |
| Nickel | 6 | 67 | .00 | 14.00 | 4.67 | ug/L |
| Vanadium | 6 | 67 | .00 | 37.00 | 9.83 | ug/L |
| Naphthalene | 5 | 60 | .00 | 2.10 | .72 | ug/L |
| m-Cresol | 5 | 60 | .00 | 4.00 | 1.41 | ug/L |
| Abietic Acid | 6 | 50 | .00 | .04 | .01 | mg/L |
| Benzene | 6 | 50 | .00 | 3.60 | .74 | ug/L |
| p-Cresol | 5 | 40 | .00 | 6.90 | 1.74 | ug/L |
| 1,2,3,4-Tetrachlorobenzene | 6 | 33 | .00 | .02 | .01 | ug/L |
| 1,2,3-Trichlorobenzene | 6 | 33 | .00 | .02 | .00 | ug/L |
| 1,2-Dichloropropane | 6 | 33 | .00 | 5.90 | 1.90 | ug/L |
| Hexachloroethane | 6 | 33 | .00 | .00 | .00 | ug/L |
| Lead | 6 | 33 | .00 | 16.00 | 4.67 | ug/L |
| Pimaric Acid | 6 | 33 | .00 | .06 | .02 | mg/L |
| Styrene | 6 | 33 | .00 | .63 | .15 | ug/L |
| m-Xylene and p-Xylene | 6 | 33 | .00 | 1.67 | .47 | ug/L |
| o-Xylene | 6 | 33 | .00 | .87 | .22 | ug/L |
| 1-Methylnaphthalene | 5 | 20 | .00 | .60 | .12 | ug/L |
| 2-Methylnaphthalene | 5 | 20 | .00 | .80 | .16 | ug/L |
| Benzo(a)pyrene | 5 | 20 | .00 | 1.00 | .20 | ug/L |
| Benzo(g,h,i)perylene | 5 | 20 | .00 | 5.00 | 1.00 | ug/L |
| Dibenz(a,h)anthracene | 5 | 20 | .00 | 10.00 | 2.00 | ug/L |
| Indeno(1,2,3-cd)pyrene | 5 | 20 | .00 | 5.00 | 1.00 | ug/L |
| Perylene | 5 | 20 | .00 | 1.00 | .20 | ug/L |
| 1,2-Dichloroethane | 6 | 17 | .00 | 5.50 | .92 | ug/L |
| Chlorodehydroabietic Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Chloromethane | 6 | 17 | .00 | 2.50 | .42 | ug/L |
| Levopimaric Acid | 6 | 17 | .00 | .25 | .04 | mg/L |
| Mercury | 6 | 17 | .00 | .10 | .02 | ug/L |
| Molybdenum | 6 | 17 | .00 | 6.00 | 1.00 | ug/L |
| Neoabietic Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Oleic Acid | 6 | 17 | .00 | .04 | .01 | mg/L |
| Silver | 6 | 17 | .00 | 2.00 | .33 | ug/L |
| Toluene | 6 | 17 | .00 | .73 | .12 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.16
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT JAMES RIVER-MARATHON LTD.

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 6 | 100 | .02 | .22 | .08 | mg/L |
| Adsorbable Organic Halide | 80 | 100 | 6.80 | 134.95 | 34.68 | mg/L |
| Aluminum | 27 | 100 | 100.00 | 480.00 | 282.96 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | 1.86 | 3.27 | 2.50 | mg/L |
| BOD, 5 day, Total Demand | 79 | 100 | 112.00 | 284.00 | 197.39 | mg/L |
| COD | 177 | 100 | 400.00 | 1,055.00 | 762.70 | mg/L |
| Chlorodehydroabietic Acid | 6 | 100 | .10 | .27 | .15 | mg/L |
| Chloroform | 6 | 100 | 18.70 | 810.00 | 417.37 | ug/L |
| Hydrogen ion (pH) | 177 | 100 | 2.42 | 10.96 | 4.33 | |
| Isopimaric Acid | 6 | 100 | .02 | .09 | .04 | mg/L |
| Levopimaric Acid | 6 | 100 | .02 | .10 | .04 | mg/L |
| Neoabietic Acid | 6 | 100 | .01 | .04 | .02 | mg/L |
| Oleic Acid | 6 | 100 | .02 | .15 | .09 | mg/L |
| Pimaric Acid | 6 | 100 | .01 | .06 | .02 | mg/L |
| Specific conductance | 177 | 100 | 690.00 | 3,800.00 | 2,110.06 | usiem/cm |
| Sulphide | 6 | 100 | .05 | 1.32 | .41 | mg/L |
| Total Kjeldahl nitrogen | 6 | 100 | 1.92 | 4.01 | 2.86 | mg/L |
| Total TCDF | 6 | 100 | .02 | .15 | .08 | ng/L |
| Total phosphorus | 6 | 100 | .41 | .73 | .54 | mg/L |
| Total suspended solids | 177 | 100 | 21.00 | 158.00 | 46.52 | mg/L |
| Zinc | 27 | 100 | 30.00 | 190.00 | 58.89 | ug/L |
| Dehydroabietic Acid | 80 | 99 | .00 | .11 | .04 | mg/L |
| Dichlorodehydroabietic Ac. | 80 | 99 | .00 | .07 | .02 | mg/L |
| Total PCDF | 6 | 67 | .00 | .13 | .04 | ng/L |
| Total TCDD | 6 | 67 | .00 | .03 | .02 | ng/L |
| Copper | 5 | 60 | .00 | 10.00 | 6.00 | ug/L |
| o-Xylene | 5 | 60 | .00 | 52.00 | 11.68 | ug/L |
| 1,2,3,5-Tetrachlorobenzene | 6 | 50 | .00 | .27 | .07 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 50 | .00 | 3.57 | .61 | ug/L |
| 2,3,7,8 TCDD | 6 | 50 | .00 | .01 | .00 | ng/L |
| Chromium | 6 | 50 | .00 | 20.00 | 10.00 | ug/L |
| Nickel | 6 | 50 | .00 | 90.00 | 28.33 | ug/L |
| Octachlorodibenzo-p-dioxin | 6 | 50 | .00 | .33 | .10 | ng/L |
| Toluene | 4 | 50 | .00 | 5.99 | 2.62 | ug/L |
| Total H7CDD | 6 | 50 | .00 | .05 | .02 | ng/L |
| m-Xylene and p-Xylene | 5 | 40 | .00 | 110.00 | 23.00 | ug/L |
| 1,2,3,4-Tetrachlorobenzene | 6 | 33 | .00 | .18 | .04 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 6 | 33 | .00 | .27 | .05 | ug/L |
| Cadmium | 6 | 33 | .00 | 4.00 | 1.17 | ug/L |
| Hexachlorocyclopentadiene | 6 | 33 | .00 | .15 | .04 | ug/L |
| Mercury | 6 | 33 | .00 | .10 | .03 | ug/L |
| Octachlorodibenzofuran | 6 | 33 | .00 | .05 | .01 | ng/L |
| Total H6CDD | 6 | 33 | .00 | .01 | .00 | ng/L |
| Total PCDD | 6 | 33 | .00 | .05 | .01 | ng/L |
| Benzene | 4 | 25 | .00 | 1.60 | .40 | ug/L |
| Styrene | 4 | 25 | .00 | 3.10 | .78 | ug/L |
| Trichloroethylene | 4 | 25 | .00 | 3.18 | .80 | ug/L |
| 2,4,5-Trichlorophenol | 6 | 17 | .00 | 3.50 | .58 | ug/L |
| 2,4,5-Trichlorotoluene | 6 | 17 | .00 | .08 | .01 | ug/L |
| Camphene | 6 | 17 | .00 | 6.20 | 1.03 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.16 (cont'd)
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT JAMES RIVER-MARATHON LTD.

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Hexachlorobenzene | 6 | 17 | .00 | 18.65 | 3.11 | ug/L |
| Hexachlorobutadiene | 6 | 17 | .00 | .05 | .01 | ug/L |
| Hexachloroethane | 6 | 17 | .00 | .02 | .00 | ug/L |
| Lead | 6 | 17 | .00 | 50.00 | 8.33 | ug/L |
| Pentachlorobenzene | 6 | 17 | .00 | .01 | .00 | ug/L |
| Total H6CDF | 6 | 17 | .00 | .12 | .02 | ng/L |
| Total H7CDF | 6 | 17 | .00 | .05 | .01 | ng/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.17
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT KIMBERLY-CLARK CANADA INC., HUNTSVILLE

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| BOD, 5 day, Total Demand | 16 | 100 | .40 | 15.60 | 8.02 | mg/L |
| COD | 51 | 100 | 61.00 | 288.00 | 92.39 | mg/L |
| Chloroform | 2 | 100 | 1.40 | 2.90 | 2.15 | ug/L |
| Copper | 2 | 100 | 10.00 | 10.00 | 10.00 | ug/L |
| Hydrogen ion (pH) | 51 | 100 | 7.00 | 7.60 | 7.21 | |
| Octachlorodibenzo-p-dioxin | 2 | 100 | .08 | .09 | .08 | ng/L |
| Specific conductance | 51 | 100 | 414.00 | 590.00 | 501.37 | umiem/cm |
| Total Kjeldahl nitrogen | 2 | 100 | 5.20 | 6.40 | 5.80 | mg/L |
| Total phosphorus | 2 | 100 | .10 | .18 | .14 | mg/L |
| Aluminum | 6 | 83 | .00 | 100.00 | 48.33 | ug/L |
| Zinc | 6 | 33 | .00 | 30.00 | 6.67 | ug/L |
| Total suspended solids | 51 | 4 | .00 | 9.00 | .33 | mg/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.18
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT KIMBERLY-CLARK CANADA INC., ST. CATHARINES

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 6 | 100 | .27 | 4.04 | 2.05 | ug/L |
| 2-Methylnaphthalene | 6 | 100 | .45 | 8.00 | 3.80 | ug/L |
| Aluminum | 24 | 100 | 44.00 | 762.00 | 114.52 | ug/L |
| BOD, 5 day, Total Demand | 68 | 100 | 6.50 | 61.00 | 34.86 | mg/L |
| COD | 164 | 100 | 31.00 | 207.20 | 113.06 | mg/L |
| Copper | 6 | 100 | 1.40 | 20.40 | 9.20 | ug/L |
| Dehydroabietic Acid | 5 | 100 | .00 | .27 | .08 | mg/L |
| Hydrogen ion (pH) | 164 | 100 | 5.61 | 7.09 | 6.40 | |
| Naphthalene | 6 | 100 | .72 | 11.20 | 4.69 | ug/L |
| Oleic Acid | 5 | 100 | .03 | .26 | .13 | mg/L |
| Pimaric Acid | 5 | 100 | .00 | .06 | .02 | mg/L |
| Specific conductance | 163 | 100 | 290.00 | 436.00 | 365.04 | usiem/cm |
| Toluene | 6 | 100 | .56 | 6.00 | 2.11 | ug/L |
| Total Kjeldahl nitrogen | 5 | 100 | 1.20 | 2.90 | 1.81 | mg/L |
| Total phosphorus | 5 | 100 | .04 | .20 | .10 | mg/L |
| Zinc | 23 | 100 | 4.00 | 68.00 | 14.70 | ug/L |
| m-Xylene and p-Xylene | 6 | 100 | .14 | 1.07 | .49 | ug/L |
| 1,1-Dichloroethane | 6 | 83 | .00 | 1.80 | 1.10 | ug/L |
| Abietic Acid | 6 | 83 | .00 | .06 | .02 | mg/L |
| Chloroform | 6 | 83 | .00 | 1.64 | .50 | ug/L |
| Phenol | 6 | 83 | .00 | 8.10 | 3.94 | ug/L |
| Isopimaric Acid | 5 | 80 | .00 | .04 | .02 | mg/L |
| Nickel | 6 | 67 | .00 | 6.00 | 2.80 | ug/L |
| Total TCDF | 3 | 67 | .00 | .04 | .02 | ng/L |
| Trichloroethylene | 6 | 67 | .00 | 1.72 | .39 | ug/L |
| Total suspended solids | 164 | 63 | .00 | 21.00 | 5.98 | mg/L |
| 2,4,6-Trichlorophenol | 6 | 50 | .00 | .34 | .16 | ug/L |
| Bromodichloromethane | 6 | 50 | .00 | .72 | .20 | ug/L |
| Levopimaric Acid | 6 | 50 | .00 | .04 | .01 | mg/L |
| Methylene chloride | 6 | 50 | .00 | 9.50 | 2.82 | ug/L |
| Tetrachloroethylene | 6 | 50 | .00 | 1.30 | .37 | ug/L |
| Total H6CDF | 2 | 50 | .00 | .02 | .01 | ng/L |
| Total PCDF | 2 | 50 | .00 | .02 | .01 | ng/L |
| o-Xylene | 6 | 50 | .00 | .43 | .15 | ug/L |
| Ammonia plus Ammonium | 5 | 40 | .00 | .07 | .03 | mg/L |
| Chlorodehydroabietic Acid | 6 | 33 | .00 | .00 | .00 | mg/L |
| Dibromochloromethane | 6 | 33 | .00 | .38 | .08 | ug/L |
| Neoabietic Acid | 6 | 33 | .00 | .00 | .00 | mg/L |
| Phenanthrene | 6 | 33 | .00 | .08 | .02 | ug/L |
| p-Cresol | 6 | 33 | .00 | 6.80 | 1.88 | ug/L |
| 1,2-Dichloroethane | 6 | 17 | .00 | .12 | .02 | ug/L |
| 2,4-Dichlorophenol | 6 | 17 | .00 | .08 | .01 | ug/L |
| 2,4-Dimethylphenol | 6 | 17 | .00 | 2.40 | .40 | ug/L |
| 2,6-Dichlorophenol | 6 | 17 | .00 | .05 | .01 | ug/L |
| Anthracene | 6 | 17 | .00 | .02 | .00 | ug/L |
| Benzene | 6 | 17 | .00 | .16 | .03 | ug/L |
| Hexachlorocyclopentadiene | 6 | 17 | .00 | .73 | .12 | ug/L |
| Molybdenum | 6 | 17 | .00 | 6.50 | 1.08 | ug/L |
| Pentachlorophenol | 6 | 17 | .00 | .16 | .03 | ug/L |
| m-Cresol | 6 | 17 | .00 | 2.86 | .48 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.19
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT KIMBERLY-CLARK CANADA INC., TERRACE BAY

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Adsorbable Organic Halide | 79 | 100 | 12.60 | 29.30 | 21.96 | mg/L |
| Aluminum | 27 | 100 | 370.00 | 670.00 | 558.52 | ug/L |
| BOD, 5 day, Total Demand | 78 | 100 | 4.70 | 30.60 | 15.90 | mg/L |
| COD | 183 | 100 | 170.00 | 794.00 | 497.20 | mg/L |
| Chloroform | 6 | 100 | 4.40 | 14.50 | 9.27 | ug/L |
| Hydrogen ion (pH) | 183 | 100 | 7.00 | 8.40 | 7.68 | |
| Octachlorodibenzo-p-dioxin | 6 | 100 | .07 | .20 | .11 | ng/L |
| Specific conductance | 183 | 100 | 1,200.00 | 2,700.00 | 1,954.34 | usiem/cm |
| Total Kjeldahl nitrogen | 27 | 100 | 2.60 | 9.60 | 4.62 | mg/L |
| Total TCDD | 6 | 100 | .20 | .93 | .45 | ng/L |
| Total TCDF | 6 | 100 | .16 | .35 | .27 | ng/L |
| Total phosphorus | 27 | 100 | .30 | .80 | .47 | mg/L |
| Total suspended solids | 183 | 100 | 22.00 | 76.00 | 40.79 | mg/L |
| VSS | 27 | 100 | 24.00 | 61.00 | 37.76 | mg/L |
| Zinc | 27 | 100 | 70.00 | 180.00 | 92.22 | ug/L |
| Ammonia plus Ammonium | 27 | 93 | .00 | 2.10 | 1.05 | mg/L |
| Chromium | 6 | 83 | .00 | 260.00 | 130.00 | ug/L |
| Sulphide | 6 | 83 | .00 | .16 | .04 | mg/L |
| Abietic Acid | 6 | 67 | .00 | .05 | .01 | mg/L |
| Nickel | 6 | 67 | .00 | 20.00 | 10.00 | ug/L |
| Total PCDF | 6 | 67 | .00 | .05 | .02 | ng/L |
| Nitrate+Nitrite | 26 | 62 | .00 | 1.60 | .21 | mg/L |
| 1,2,4,5-Tetrachlorobenzene | 6 | 50 | .00 | .06 | .02 | ug/L |
| 2,4,6-Trichlorophenol | 6 | 50 | .00 | 5.60 | 2.43 | ug/L |
| 2,4-Dichlorophenol | 6 | 50 | .00 | 2.60 | 1.10 | ug/L |
| Chlorodehydroabietic Acid | 6 | 50 | .00 | .01 | .00 | mg/L |
| Copper | 6 | 50 | .00 | 20.00 | 6.67 | ug/L |
| Oleic Acid | 6 | 50 | .00 | .03 | .01 | mg/L |
| Cadmium | 6 | 33 | .00 | 2.00 | .67 | ug/L |
| Mercury | 6 | 33 | .00 | .12 | .04 | ug/L |
| Dehydroabietic Acid | 79 | 30 | .00 | .13 | .01 | mg/L |
| 2,3,4,6-Tetrachlorophenol | 6 | 17 | .00 | 1.20 | .20 | ug/L |
| 2,3,7,8 TCDD | 6 | 17 | .00 | .02 | .00 | ng/L |
| Isopimaric Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Neoabietic Acid | 6 | 17 | .00 | .07 | .01 | mg/L |
| Pimaric Acid | 6 | 17 | .00 | .01 | .00 | mg/L |
| Toluene | 6 | 17 | .00 | 1.00 | .17 | ug/L |
| Vanadium | 6 | 17 | .00 | 20.00 | 3.33 | ug/L |
| Dichlorodehydroabietic Ac. | 79 | 8 | .00 | .04 | .00 | mg/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.20a
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT MACMILLAN BLOEDEL LTD.
CONTROL POINT # 1200

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Ammonia plus Ammonium | 6 | 100 | 1.29 | 11.21 | 3.37 | mg/L |
| BOD, 5 day, Total Demand | 72 | 100 | 199.00 | 4,213.00 | 2,769.36 | mg/L |
| Cadmium | 6 | 100 | 5.00 | 20.00 | 12.90 | ug/L |
| Cobalt | 6 | 100 | 20.00 | 80.00 | 43.33 | ug/L |
| DOC | 166 | 100 | 97.00 | 4,270.00 | 2,722.78 | mg/L |
| Hydrogen ion (pH) | 166 | 100 | 4.68 | 12.16 | 5.31 | |
| Lead | 6 | 100 | 30.00 | 120.00 | 70.00 | ug/L |
| Nickel | 6 | 100 | 20.00 | 120.00 | 68.33 | ug/L |
| Specific conductance | 165 | 100 | 170.00 | 4,210.00 | 2,644.61 | usiem/cm |
| Thallium | 6 | 100 | 20.00 | 160.00 | 71.67 | ug/L |
| Total Kjeldahl nitrogen | 6 | 100 | 10.50 | 47.56 | 28.08 | mg/L |
| Total phosphorus | 6 | 100 | 1.18 | 3.45 | 1.97 | mg/L |
| Total suspended solids | 166 | 100 | 4.00 | 262.00 | 82.01 | mg/L |
| Zinc | 23 | 100 | 29.00 | 2,697.00 | 835.92 | ug/L |
| Aluminum | 24 | 96 | .00 | 420.00 | 200.00 | ug/L |
| Isopimaric Acid | 6 | 83 | .00 | .59 | .21 | mg/L |
| Levopimaric Acid | 6 | 83 | .00 | .91 | .30 | mg/L |
| Pimaric Acid | 6 | 83 | .00 | 1.59 | .32 | mg/L |
| Vanadium | 6 | 83 | .00 | 110.00 | 51.67 | ug/L |
| Nitrate+Nitrite | 5 | 80 | .00 | 389.17 | 243.46 | mg/L |
| Copper | 6 | 67 | .00 | 71.00 | 31.00 | ug/L |
| Dehydroabietic Acid | 72 | 67 | .00 | .76 | .07 | mg/L |
| Neoabietic Acid | 6 | 67 | .00 | .24 | .09 | mg/L |
| Oleic Acid | 6 | 67 | .00 | 3.65 | .96 | mg/L |
| Silver | 6 | 67 | .00 | 89.00 | 24.00 | ug/L |
| Molybdenum | 6 | 50 | .00 | 50.00 | 16.67 | ug/L |
| Abietic Acid | 6 | 33 | .00 | .25 | .05 | mg/L |
| Chlorodehydroabietic Acid | 6 | 33 | .00 | .41 | .08 | mg/L |
| Chromium | 6 | 17 | .00 | 128.00 | 21.33 | ug/L |
| Mercury | 6 | 17 | .00 | .40 | .07 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.20b
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT MACMILLAN BLOEDEL LTD.
CONTROL POINT # 1300

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 24 | 100 | 190.00 | 3,320.00 | 1,044.17 | ug/L |
| Ammonia plus Ammonium | 24 | 100 | 1.50 | 80.61 | 21.00 | mg/L |
| BOD, 5 day, Total Demand | 80 | 100 | 480.00 | 3,106.00 | 1,326.63 | mg/L |
| Cobalt | 6 | 100 | 30.00 | 90.00 | 53.33 | ug/L |
| Copper | 6 | 100 | 38.00 | 98.00 | 75.50 | ug/L |
| DOC | 165 | 100 | 560.00 | 2,650.00 | 1,559.70 | mg/L |
| Hydrogen ion (pH) | 165 | 100 | 4.29 | 7.85 | 7.02 | |
| Nitrate+Nitrite | 24 | 100 | 63.01 | 626.67 | 228.30 | mg/L |
| Pimaric Acid | 6 | 100 | .04 | .65 | .19 | mg/L |
| Specific conductance | 165 | 100 | 510.00 | 4,760.00 | 2,621.44 | usiem/cm |
| Thallium | 6 | 100 | 40.00 | 230.00 | 86.67 | ug/L |
| Total phosphorus | 24 | 100 | 1.84 | 21.95 | 9.90 | mg/L |
| Total suspended solids | 165 | 100 | 118.00 | 1,188.00 | 463.73 | mg/L |
| VSS | 24 | 100 | 199.00 | 714.00 | 394.71 | mg/L |
| Zinc | 22 | 100 | 281.00 | 3,013.00 | 834.45 | ug/L |
| Total Kjeldahl nitrogen | 24 | 96 | .00 | 182.26 | 78.66 | mg/L |
| Cadmium | 6 | 83 | .00 | 20.80 | 9.65 | ug/L |
| Lead | 6 | 83 | .00 | 130.00 | 61.67 | ug/L |
| Levopimaric Acid | 6 | 83 | .00 | 11.20 | 1.93 | mg/L |
| Nickel | 6 | 83 | .00 | 230.00 | 98.33 | ug/L |
| Dehydroabietic Acid | 80 | 74 | .00 | 5.47 | .20 | mg/L |
| Abietic Acid | 6 | 67 | .00 | .08 | .04 | mg/L |
| Isopimaric Acid | 6 | 67 | .00 | 1.56 | .40 | mg/L |
| Molybdenum | 6 | 67 | .00 | 60.00 | 26.67 | ug/L |
| Oleic Acid | 6 | 67 | .00 | .09 | .02 | mg/L |
| Chlorodehydroabietic Acid | 6 | 50 | .00 | .08 | .03 | mg/L |
| Silver | 6 | 50 | .00 | 131.00 | 38.67 | ug/L |
| Vanadium | 6 | 50 | .00 | 120.00 | 45.00 | ug/L |
| Neoabietic Acid | 6 | 33 | .00 | .44 | .07 | mg/L |
| Chromium | 6 | 17 | .00 | 131.00 | 21.83 | ug/L |
| Mercury | 6 | 17 | .00 | .40 | .07 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.21
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT MALETTE KRAFT PULP AND POWER

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 6 | 100 | .00 | .06 | .02 | ug/L |
| Adsorbable Organic Halide | 72 | 100 | .10 | 36.00 | 19.64 | mg/L |
| Aluminum | 19 | 100 | 1,210.00 | 7,500.00 | 3,671.05 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .15 | .86 | .40 | mg/L |
| BOD, 5 day, Total Demand | 69 | 100 | 64.00 | 310.00 | 144.99 | mg/L |
| COD | 164 | 100 | 29.00 | 6,000.00 | 625.82 | mg/L |
| Chlorodehydroabietic Acid | 6 | 100 | .06 | .39 | .14 | mg/L |
| Chromium | 5 | 100 | 4.00 | 190.00 | 47.40 | ug/L |
| Dehydroabietic Acid | 69 | 100 | .05 | 5.30 | .72 | mg/L |
| Hydrogen ion (pH) | 164 | 100 | 2.40 | 11.20 | 5.82 | |
| Isopimaric Acid | 6 | 100 | .03 | 3.50 | .66 | mg/L |
| Naphthalene | 6 | 100 | .00 | 1.00 | .58 | ug/L |
| Nitrate+Nitrite | 6 | 100 | .04 | .24 | .14 | mg/L |
| Pimaric Acid | 6 | 100 | .04 | .83 | .37 | mg/L |
| Specific conductance | 164 | 100 | 330.00 | 4,120.00 | 1,652.29 | usiem/cm |
| Total Kjeldahl nitrogen | 6 | 100 | 1.38 | 2.80 | 1.92 | mg/L |
| Total phosphorus | 6 | 100 | .24 | .95 | .48 | mg/L |
| Total suspended solids | 164 | 100 | 11.00 | 125.00 | 38.66 | mg/L |
| Zinc | 19 | 100 | 35.00 | 250.00 | 137.05 | ug/L |
| p-Cresol | 6 | 100 | .00 | 3.00 | 1.85 | ug/L |
| Dichlorodehydroabietic Ac. | 69 | 96 | .00 | .31 | .11 | mg/L |
| 2,4,5-Trichlorotoluene | 6 | 83 | .00 | .06 | .02 | ug/L |
| 2,4-Dichlorophenol | 6 | 83 | .00 | 4.40 | 2.17 | ug/L |
| Abietic Acid | 6 | 83 | .00 | 3.50 | .75 | mg/L |
| Camphene | 6 | 83 | .00 | 18.40 | 4.39 | ug/L |
| Chloroform | 6 | 83 | .00 | 390.00 | 202.67 | ug/L |
| Phenol | 6 | 83 | .00 | 45.00 | 20.14 | ug/L |
| Sulphide | 6 | 83 | .00 | .13 | .07 | mg/L |
| m-Cresol | 6 | 83 | .00 | 56.00 | 22.87 | ug/L |
| o-Cresol | 6 | 83 | .00 | 3.40 | 1.42 | ug/L |
| Copper | 5 | 80 | .00 | 15.00 | 8.00 | ug/L |
| Total TCDF | 5 | 80 | .00 | .25 | .11 | ng/L |
| 2,4,6-Trichlorophenol | 6 | 67 | .00 | 8.40 | 3.50 | ug/L |
| 2,4-Dimethylphenol | 6 | 67 | .00 | 1.40 | .48 | ug/L |
| Neoabiatic Acid | 6 | 67 | .00 | .80 | .17 | mg/L |
| Toluene | 6 | 67 | .00 | 5.10 | 1.94 | ug/L |
| Nickel | 5 | 60 | .00 | 9.00 | 4.40 | ug/L |
| Lead | 5 | 60 | .00 | 26.00 | 11.80 | ug/L |
| 2-Chlorophenol | 6 | 50 | .00 | .80 | .23 | ug/L |
| Levopimaric Acid | 6 | 50 | .00 | .09 | .02 | mg/L |
| Oleic Acid | 6 | 50 | .00 | .78 | .18 | mg/L |
| Styrene | 6 | 50 | .00 | 1.88 | .61 | ug/L |
| m-Xylene and p-Xylene | 6 | 50 | .00 | 1.84 | .58 | ug/L |
| 4-Chloro-3-methylphenol | 6 | 33 | .00 | .50 | .09 | ug/L |
| Benzene | 6 | 33 | .00 | 38.00 | 6.56 | ug/L |
| Chlorobenzene | 6 | 33 | .00 | 8.40 | 1.50 | ug/L |
| Mercury | 6 | 33 | .00 | .20 | .06 | ug/L |
| Octachlorodibenzo-p-dioxin | 6 | 33 | .00 | .09 | .03 | ng/L |
| Phenanthrene | 6 | 33 | .00 | .30 | .10 | ug/L |
| Total H6CDD | 6 | 33 | .00 | .10 | .02 | ng/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.21 (cont'd)
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT MALETTE KRAFT PULP AND POWER

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Total H7CDD | 6 | 33 | .00 | .11 | .03 | ng/L |
| Total TCDD | 4 | 25 | .00 | .01 | .00 | ng/L |
| 1,1-Dichloroethane | 6 | 17 | .00 | 4.80 | .80 | ug/L |
| 1,3-Dichlorobenzene | 6 | 17 | .00 | .33 | .06 | ug/L |
| 1-Methylnaphthalene | 6 | 17 | .00 | .20 | .03 | ug/L |
| 2,3,7,8 TCDD | 6 | 17 | .00 | .01 | .00 | ng/L |
| 2,4-Dinitrophenol | 6 | 17 | .00 | 165.00 | 27.50 | ug/L |
| 2-Chloronaphthalene | 6 | 17 | .00 | .00 | .00 | ug/L |
| 2-Methylnaphthalene | 6 | 17 | .00 | .30 | .05 | ug/L |
| 4,6-Dinitro-o-cresol | 6 | 17 | .00 | 165.00 | 27.50 | ug/L |
| 4-Nitrophenol | 6 | 17 | .00 | 9.70 | 1.62 | ug/L |
| Acenaphthylene | 6 | 17 | .00 | .40 | .07 | ug/L |
| Benzo(g,h,i)perylene | 6 | 17 | .00 | 10.00 | 1.67 | ug/L |
| Benzo(k)fluoranthene | 6 | 17 | .00 | 1.00 | .17 | ug/L |
| Cadmium | 6 | 17 | .00 | 2.00 | .33 | ug/L |
| Fluoranthene | 6 | 17 | .00 | .40 | .07 | ug/L |
| Hexachloroethane | 6 | 17 | .00 | .00 | .00 | ug/L |
| Methylene chloride | 6 | 17 | .00 | 10.40 | 1.73 | ug/L |
| Octachlorodibenzofuran | 6 | 17 | .00 | .02 | .00 | ng/L |
| Pentachlorophenol | 6 | 17 | .00 | 1.20 | .20 | ug/L |
| Pyrene | 6 | 17 | .00 | .30 | .05 | ug/L |
| Total H6CDF | 6 | 17 | .00 | .02 | .00 | ng/L |
| Total H7CDF | 6 | 17 | .00 | .02 | .00 | ng/L |
| Total PCDD | 6 | 17 | .00 | .20 | .03 | ng/L |
| Total PCDF | 6 | 17 | .00 | .01 | .00 | ng/L |
| Vanadium | 6 | 17 | .00 | 5.00 | .83 | ug/L |
| o-Xylene | 6 | 17 | .00 | .28 | .05 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.22
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT NORANDA FOREST INC., RECYCLED PAPERS

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Adsorbable Organic Halide | 5 | 100 | .27 | 18.70 | 4.89 | mg/L |
| Aluminum | 22 | 100 | 1,220.00 | 11,200.00 | 3,239.09 | ug/L |
| Ammonia plus Ammonium | 22 | 100 | .04 | .34 | .10 | mg/L |
| BOD, 5 day, Total Demand | 150 | 100 | 77.00 | 420.00 | 161.90 | mg/L |
| Bromodichloromethane | 5 | 100 | 1.87 | 13.40 | 6.97 | ug/L |
| Chloroform | 5 | 100 | 18.40 | 240.00 | 108.28 | ug/L |
| Chromium | 5 | 100 | 4.00 | 10.00 | 7.40 | ug/L |
| DOC | 149 | 100 | 36.00 | 108.00 | 70.28 | mg/L |
| Dehydroabietic Acid | 5 | 100 | .05 | .26 | .15 | mg/L |
| Dibromochloromethane | 5 | 100 | .81 | 2.90 | 1.67 | ug/L |
| Hexachlorocyclopentadiene | 5 | 100 | .01 | .43 | .12 | ug/L |
| Hydrogen ion (pH) | 149 | 100 | 4.90 | 8.30 | 7.46 | |
| Nitrate+Nitrite | 22 | 100 | .05 | .89 | .43 | mg/L |
| Specific conductance | 149 | 100 | 630.00 | 1,300.00 | 945.71 | usiem/cm |
| Total Kjeldahl nitrogen | 22 | 100 | .16 | 2.40 | 1.25 | mg/L |
| Total phosphorus | 5 | 100 | .05 | .13 | .09 | mg/L |
| Total suspended solids | 149 | 100 | 13.00 | 89.40 | 45.54 | mg/L |
| VSS | 20 | 100 | 16.60 | 39.80 | 26.55 | mg/L |
| Zinc | 22 | 100 | 30.00 | 360.00 | 104.41 | ug/L |
| Copper | 5 | 80 | .00 | 14.00 | 8.60 | ug/L |
| m-Cresol | 5 | 80 | .00 | 6.10 | 2.76 | ug/L |
| o-Xylene | 5 | 80 | .00 | 3.90 | 1.11 | ug/L |
| Benzene | 5 | 60 | .00 | 10.30 | 2.41 | ug/L |
| Chlorodehydroabietic Acid | 5 | 60 | .00 | .03 | .01 | mg/L |
| Fluorene | 5 | 60 | .00 | 1.30 | .54 | ug/L |
| Octachlorodibenzo-p-dioxin | 5 | 60 | .00 | .06 | .03 | ng/L |
| Phenanthrene | 5 | 60 | .00 | 1.20 | .32 | ug/L |
| Styrene | 5 | 60 | .00 | .70 | .33 | ug/L |
| Tetrachloroethylene | 5 | 60 | .00 | .98 | .49 | ug/L |
| Vanadium | 5 | 60 | .00 | 18.00 | 6.00 | ug/L |
| m-Xylene and p-Xylene | 5 | 60 | .00 | 1.30 | .47 | ug/L |
| 1,2,4-Trichlorobenzene | 5 | 40 | .00 | .01 | .00 | ug/L |
| 2,4,5-Trichlorotoluene | 5 | 40 | .00 | .01 | .00 | ug/L |
| Molybdenum | 5 | 40 | .00 | 13.00 | 4.00 | ug/L |
| Nickel | 5 | 40 | .00 | 13.00 | 3.60 | ug/L |
| Toluene | 5 | 40 | .00 | 1.39 | .50 | ug/L |
| Total TCDF | 4 | 25 | .00 | .09 | .02 | ng/L |
| 1,1-Dichloroethylene | 5 | 20 | .00 | .75 | .15 | ug/L |
| 1,2,3,4-Tetrachlorobenzene | 5 | 20 | .00 | .02 | .00 | ug/L |
| 2,4,6-Trichlorophenol | 5 | 20 | .00 | 1.30 | .26 | ug/L |
| Bromomethane | 5 | 20 | .00 | 1.03 | .21 | ug/L |
| Levopimaric Acid | 5 | 20 | .00 | .01 | .00 | mg/L |
| Mercury | 5 | 20 | .00 | .07 | .01 | ug/L |
| Methylene chloride | 5 | 20 | .00 | 1.17 | .23 | ug/L |
| Naphthalene | 5 | 20 | .00 | .20 | .04 | ug/L |
| Oleic Acid | 5 | 20 | .00 | .03 | .01 | mg/L |
| Pentachlorobenzene | 5 | 20 | .00 | .03 | .01 | ug/L |
| Phenol | 5 | 20 | .00 | 1.50 | .30 | ug/L |
| Total H6CDF | 5 | 20 | .00 | .50 | .10 | ng/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.23
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT QUEBEC AND ONTARIO PAPER COMPANY LTD.

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1 | 100 | .00 | .00 | .00 | ug/L |
| Aluminum | 9 | 100 | 30.00 | 810.00 | 307.78 | ug/L |
| Ammonia plus Ammonium | 9 | 100 | .22 | 8.70 | 3.97 | mg/L |
| BOD, 5 day, Total Demand | 24 | 100 | 12.00 | 70.00 | 33.46 | mg/L |
| Bromodichloromethane | 1 | 100 | 1.60 | 1.60 | 1.60 | ug/L |
| Chloroform | 1 | 100 | 2.60 | 2.60 | 2.60 | ug/L |
| Chromium | 2 | 100 | 4.00 | 6.00 | 5.00 | ug/L |
| Copper | 2 | 100 | 10.00 | 16.00 | 13.00 | ug/L |
| DOC | 49 | 100 | 3.50 | 46.00 | 30.29 | mg/L |
| Dibromochloromethane | 1 | 100 | .96 | .96 | .96 | ug/L |
| Hydrogen ion (pH) | 54 | 100 | 6.90 | 8.90 | 7.37 | |
| Indole | 1 | 100 | .70 | .70 | .70 | ug/L |
| Methylene chloride | 1 | 100 | 2.20 | 2.20 | 2.20 | ug/L |
| Nickel | 2 | 100 | 4.00 | 4.00 | 4.00 | ug/L |
| Nitrate+Nitrite | 9 | 100 | .12 | 1.15 | .47 | mg/L |
| Specific conductance | 52 | 100 | 369.00 | 783.00 | 656.23 | usiem/cm |
| Styrene | 1 | 100 | .78 | .78 | .78 | ug/L |
| Total Kjeldahl nitrogen | 9 | 100 | .89 | 9.40 | 5.51 | mg/L |
| Total phosphorus | 9 | 100 | .06 | .98 | .53 | mg/L |
| Total suspended solids | 54 | 100 | 21.00 | 326.00 | 54.15 | mg/L |
| VSS | 9 | 100 | 16.00 | 84.00 | 38.00 | mg/L |
| Vanadium | 2 | 100 | 6.00 | 10.00 | 8.00 | ug/L |
| Zinc | 8 | 100 | 39.00 | 195.00 | 134.88 | ug/L |
| m-Cresol | 1 | 100 | .60 | .60 | .60 | ug/L |
| m-Xylene and p-Xylene | 1 | 100 | .62 | .62 | .62 | ug/L |
| Cobalt | 2 | 50 | .00 | 4.00 | 2.00 | ug/L |
| Molybdenum | 2 | 50 | .00 | 3.00 | 1.50 | ug/L |
| Oehydroabietic Acid | 21 | 38 | .00 | 3.70 | .32 | mg/L |

No.. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.24
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT ST. MARYS PAPER INC.

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 6 | 100 | .05 | .83 | .59 | mg/L |
| Aluminum | 25 | 100 | 240.00 | 10,600.00 | 2,621.20 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .05 | .60 | .16 | mg/L |
| BOD, 5 day, Total Demand | 74 | 100 | 99.00 | 440.00 | 224.31 | mg/L |
| COD | 179 | 100 | 45.00 | 840.00 | 519.58 | mg/L |
| Dehydroabietic Acid | 72 | 100 | 1.02 | 4.00 | 2.21 | mg/L |
| Hydrogen ion (pH) | 181 | 100 | 5.40 | 9.20 | 7.00 | |
| Isopimaric Acid | 6 | 100 | .28 | .52 | .42 | mg/L |
| Levopimaric Acid | 6 | 100 | .12 | .35 | .24 | mg/L |
| Naphthalene | 6 | 100 | .51 | 1.40 | 1.05 | ug/L |
| Neoabietic Acid | 6 | 100 | .10 | .43 | .25 | mg/L |
| Nitrate+Nitrite | 6 | 100 | .04 | .11 | .07 | mg/L |
| Octachlorodibenzo-p-dioxin | 3 | 100 | .11 | .15 | .13 | ng/L |
| Phenol | 6 | 100 | 1.70 | 11.50 | 3.93 | ug/L |
| Pimaric Acid | 6 | 100 | .03 | .27 | .14 | mg/L |
| Specific conductance | 178 | 100 | 177.00 | 505.50 | 307.61 | usiem/cm |
| Total Kjeldahl nitrogen | 6 | 100 | 1.13 | 1.45 | 1.28 | mg/L |
| Total phosphorus | 6 | 100 | .73 | 1.33 | .99 | mg/L |
| Total suspended solids | 181 | 100 | 20.00 | 498.00 | 154.02 | mg/L |
| Zinc | 25 | 100 | 29.00 | 191.00 | 60.56 | ug/L |
| m-Cresol | 6 | 100 | 2.10 | 5.40 | 3.38 | ug/L |
| p-Cresol | 6 | 100 | 1.00 | 8.10 | 4.37 | ug/L |
| Toluene | 6 | 83 | .00 | 7.40 | 3.72 | ug/L |
| Benzene | 6 | 67 | .00 | 3.50 | 1.64 | ug/L |
| Chloroform | 6 | 67 | .00 | 2.40 | 1.21 | ug/L |
| Methylene chloride | 6 | 67 | .00 | 190.00 | 37.92 | ug/L |
| Copper | 5 | 60 | .00 | 19.00 | 9.80 | ug/L |
| Vanadium | 5 | 60 | .00 | 40.00 | 13.20 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 50 | .00 | .00 | .00 | ug/L |
| Camphene | 6 | 50 | .00 | .70 | .23 | ug/L |
| Oleic Acid | 6 | 50 | .00 | .40 | .10 | mg/L |
| o-Cresol | 6 | 50 | .00 | 1.30 | .38 | ug/L |
| Chromium | 5 | 40 | .00 | 9.00 | 3.20 | ug/L |
| Molybdenum | 5 | 40 | .00 | 29.00 | 6.80 | ug/L |
| Bromomethane | 6 | 33 | .00 | 23.00 | 4.35 | ug/L |
| Hexachlorobenzene | 6 | 33 | .00 | .00 | .00 | ug/L |
| Octachlorodibenzofuran | 3 | 33 | .00 | .04 | .01 | ng/L |
| Total H7CDD | 3 | 33 | .00 | .03 | .01 | ng/L |
| Total PCDF | 3 | 33 | .00 | .03 | .01 | ng/L |
| Total TCDF | 3 | 33 | .00 | .01 | .00 | ng/L |
| m-Xylene and p-Xylene | 6 | 33 | .00 | .71 | .21 | ug/L |
| Mercury | 5 | 20 | .00 | .07 | .01 | ug/L |
| Silver | 5 | 20 | .00 | 1.20 | .24 | ug/L |
| 2,4-Dimethylphenol | 6 | 17 | .00 | .50 | .08 | ug/L |
| Chlorodehydroabietic Acid | 6 | 17 | .00 | .02 | .00 | mg/L |
| Fluoranthene | 6 | 17 | .00 | .40 | .07 | ug/L |
| Styrene | 6 | 17 | .00 | .48 | .08 | ug/L |
| o-Xylene | 6 | 17 | .00 | .33 | .06 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.25
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT SPRUCE FALLS POWER AND PAPER COMPANY LTD.

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Abietic Acid | 6 | 100 | .55 | 2.45 | 1.32 | mg/L |
| Aluminum | 27 | 100 | 120.00 | 660.00 | 278.15 | ug/L |
| BOD, 5 day, Total Demand | 80 | 100 | 225.00 | 1,080.00 | 445.46 | mg/L |
| COD | 178 | 100 | 360.00 | 1,320.00 | 795.84 | mg/L |
| Conductivity, average | 179 | 100 | 124.00 | 491.00 | 302.91 | usiem/cm |
| Conductivity, maximum | 179 | 100 | 260.00 | 1,000.00 | 638.88 | usiem/cm |
| Conductivity, minimum | 179 | 100 | .00 | 400.00 | 216.26 | usiem/cm |
| Copper | 6 | 100 | 20.00 | 40.00 | 30.00 | ug/L |
| Dehydroabietic Acid | 80 | 100 | .95 | 4.06 | 2.23 | mg/L |
| Hydrogen ion (pH) | 178 | 100 | 3.74 | 8.45 | 6.02 | |
| Isopimaric Acid | 6 | 100 | .19 | .83 | .47 | mg/L |
| Neoabietic Acid | 6 | 100 | .36 | 3.86 | 1.47 | mg/L |
| Octachlorodibenzo-p-dioxin | 3 | 100 | .11 | .25 | .18 | ng/L |
| Oleic Acid | 6 | 100 | .02 | .87 | .42 | mg/L |
| Pimaric Acid | 6 | 100 | .01 | .19 | .07 | mg/L |
| Total Kjeldahl nitrogen | 6 | 100 | 1.34 | 12.60 | 3.71 | mg/L |
| Total phosphorus | 6 | 100 | .16 | .40 | .26 | mg/L |
| Total suspended solids | 178 | 100 | 35.00 | 222.00 | 73.13 | mg/L |
| Zinc | 27 | 100 | 90.00 | 150.00 | 114.81 | ug/L |
| Chlorodehydroabietic Acid | 6 | 83 | .00 | .05 | .02 | mg/L |
| Chloroform | 6 | 83 | .00 | 4.60 | 2.60 | ug/L |
| Toluene | 6 | 67 | .00 | 4.50 | 1.92 | ug/L |
| Nitrate+Nitrite | 6 | 50 | .00 | .21 | .07 | mg/L |
| Phenol | 6 | 50 | .00 | 4.90 | 2.03 | ug/L |
| Octachlorodibenzofuran | 3 | 33 | .00 | .05 | .02 | ng/L |
| 1,2,3-Trichlorobenzene | 6 | 17 | .00 | .01 | .00 | ug/L |
| 1,2,4,5-Tetrachlorobenzene | 6 | 17 | .00 | .01 | .00 | ug/L |
| Camphene | 6 | 17 | .00 | 2.00 | .33 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.26
PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT STRATHCONA PAPER COMPANY

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 26 | 100 | 160.00 | 1,550.00 | 556.92 | ug/L |
| Ammonia plus Ammonium | 26 | 100 | .05 | 9.10 | 3.99 | mg/L |
| BOD, 5 day, Total Demand | 74 | 100 | 19.00 | 145.00 | 47.59 | mg/L |
| COD | 177 | 100 | 160.00 | 650.00 | 342.10 | mg/L |
| Hydrogen ion (pH) | 177 | 100 | 7.26 | 8.00 | 7.71 | |
| Specific conductance | 177 | 100 | 617.00 | 796.00 | 723.01 | usiem/cm |
| Total Kjeldahl nitrogen | 26 | 100 | .89 | 17.90 | 12.62 | mg/L |
| Total phosphorus | 26 | 100 | .41 | 1.12 | .57 | mg/L |
| Total suspended solids | 177 | 100 | 21.00 | 155.00 | 68.11 | mg/L |
| VSS | 26 | 100 | 20.00 | 164.00 | 69.54 | mg/L |
| Zinc | 26 | 96 | .00 | 115.00 | 18.77 | ug/L |
| Nitrate+Nitrite | 26 | 88 | .00 | .26 | .04 | mg/L |
| Dehydroabiatic Acid | 6 | 83 | .00 | 1.75 | .33 | mg/L |
| Nickel | 6 | 83 | .00 | 29.00 | 10.33 | ug/L |
| Vanadium | 6 | 67 | .00 | 42.00 | 12.33 | ug/L |
| Benzene | 6 | 50 | .00 | 1.47 | .57 | ug/L |
| Methylene chloride | 6 | 50 | .00 | 300.00 | 82.95 | ug/L |
| Oleic Acid | 6 | 50 | .00 | .11 | .04 | mg/L |
| Chloroform | 6 | 33 | .00 | 1.40 | .36 | ug/L |
| Chromium | 6 | 33 | .00 | 3.00 | .83 | ug/L |
| Indole | 6 | 33 | .00 | 5.50 | .97 | ug/L |
| Isopimaric Acid | 6 | 33 | .00 | .03 | .01 | mg/L |
| Toluene | 6 | 33 | .00 | 1.70 | .53 | ug/L |
| m-Cresol | 6 | 33 | .00 | 6.80 | 1.22 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 17 | .00 | .00 | .00 | ug/L |
| Copper | 6 | 17 | .00 | 3.00 | .50 | ug/L |
| Lead | 6 | 17 | .00 | 17.00 | 2.83 | ug/L |
| Levopimaric Acid | 6 | 17 | .00 | .27 | .05 | mg/L |
| Phenol | 6 | 17 | .00 | 1.10 | .18 | ug/L |
| Pimaric Acid | 6 | 17 | .00 | .19 | .03 | mg/L |
| Silver | 6 | 17 | .00 | 1.50 | .25 | ug/L |
| Styrene | 6 | 17 | .00 | .90 | .15 | ug/L |
| m-Xylene and p-Xylene | 6 | 17 | .00 | .80 | .13 | ug/L |
| o-Xylene | 6 | 17 | .00 | .50 | .08 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 2.27

PRIORITY POLLUTANTS DETECTED IN PROCESS EFFLUENT AT TRENT VALLEY DIVISION (PAPERBOARD INDUSTRIES CORP.)

| PARAMETER | No. | F.D.(%) | MIN | MAX | AVG | UNIT |
|---|---|---|---|---|---|---|
| Aluminum | 25 | 100 | 3,100.00 | 19,800.00 | 8,100.00 | ug/L |
| Ammonia plus Ammonium | 6 | 100 | .05 | .17 | .10 | mg/L |
| BOD, 5 day, Total Demand | 74 | 100 | 69.00 | 640.00 | 406.20 | mg/L |
| COD | 177 | 100 | 506.00 | 1,722.00 | 894.85 | mg/L |
| Chromium | 6 | 100 | 5.00 | 25.00 | 13.83 | ug/L |
| Copper | 6 | 100 | 5.00 | 34.00 | 16.50 | ug/L |
| Dehydroabietic Acid | 6 | 100 | .09 | .99 | .31 | mg/L |
| Hydrogen ion (pH) | 178 | 100 | 4.15 | 7.55 | 6.13 | |
| Isopimaric Acid | 6 | 100 | .01 | .06 | .03 | mg/L |
| Nickel | 6 | 100 | 7.00 | 29.00 | 14.50 | ug/L |
| Octachlorodibenzo-p-dioxin | 1 | 100 | .04 | .04 | .04 | ng/L |
| Phenol | 6 | 100 | 1.70 | 75.00 | 39.70 | ug/L |
| Specific conductance | 177 | 100 | 452.00 | 1,181.00 | 799.14 | usiem/cm |
| Total Kjeldahl nitrogen | 6 | 100 | 2.10 | 4.70 | 3.13 | mg/L |
| Total TCDO | 1 | 100 | .02 | .02 | .02 | ng/L |
| Total phosphorus | 6 | 100 | .15 | .48 | .32 | mg/L |
| Total suspended solids | 178 | 100 | 50.00 | 492.00 | 135.31 | mg/L |
| Zinc | 25 | 100 | 79.00 | 250.00 | 141.32 | ug/L |
| m-Cresol | 6 | 100 | 1.90 | 17.10 | 11.55 | ug/L |
| 1,2,4-Trichlorobenzene | 6 | 83 | .00 | .01 | .01 | ug/L |
| Nitrate+Nitrite | 6 | 83 | .00 | .19 | .07 | mg/L |
| Vanadium | 6 | 83 | .00 | 38.00 | 11.33 | ug/L |
| p-Cresol | 6 | 83 | .00 | 3.00 | 1.36 | ug/L |
| 1,1-Dichloroethylene | 4 | 75 | .00 | 18.30 | 8.03 | ug/L |
| 4-Chloro-3-methylphenol | 6 | 67 | .00 | .90 | .43 | ug/L |
| Chlorodehydroabietic Acid | 6 | 67 | .00 | .04 | .01 | mg/L |
| Lead | 6 | 67 | .00 | 56.00 | 19.67 | ug/L |
| Oleic Acid | 6 | 67 | .00 | .21 | .09 | mg/L |
| Toluene | 6 | 67 | .00 | 3.50 | 1.26 | ug/L |
| Naphthalene | 6 | 50 | .00 | 1.70 | .73 | ug/L |
| Pimaric Acid | 6 | 50 | .00 | .04 | .01 | mg/L |
| o-Cresol | 6 | 50 | .00 | 1.20 | .48 | ug/L |
| 2,4-Dimethylphenol | 6 | 33 | .00 | .50 | .15 | ug/L |
| Abietic Acid | 6 | 33 | .00 | .08 | .02 | mg/L |
| Hexachloroethane | 6 | 33 | .00 | .01 | .00 | ug/L |
| Levopimaric Acid | 6 | 33 | .00 | .18 | .03 | mg/L |
| Neoabietic Acid | 6 | 33 | .00 | .04 | .01 | mg/L |
| Pentachlorophenol | 6 | 33 | .00 | 1.61 | .49 | ug/L |
| Styrene | 6 | 33 | .00 | 1.10 | .31 | ug/L |
| Methylene chloride | 5 | 20 | .00 | 3.80 | .76 | ug/L |
| 1,2,3-Trichlorobenzene | 6 | 17 | .00 | .00 | .00 | ug/L |
| 1,2-Dichlorobenzene | 6 | 17 | .00 | .84 | .14 | ug/L |
| 1,3-Dichlorobenzene | 6 | 17 | .00 | 1.00 | .17 | ug/L |
| 1,4-Dichlorobenzene | 6 | 17 | .00 | .31 | .05 | ug/L |
| Benzene | 6 | 17 | .00 | 2.60 | .43 | ug/L |
| Hexachlorocyclopentadiene | 6 | 17 | .00 | .00 | .00 | ug/L |
| Tetrachloroethylene | 6 | 17 | .00 | 2.90 | .48 | ug/L |
| Trichloroethylene | 6 | 17 | .00 | 2.30 | .38 | ug/L |
| m-Xylene and p-Xylene | 6 | 17 | .00 | .63 | .11 | ug/L |
| o-Xylene | 6 | 17 | .00 | .48 | .08 | ug/L |

No. = NUMBER OF ANALYSES
F.D. = FREQUENCY OF DETECTION ABOVE THE LABORATORY METHOD DETECTION LIMIT (%)
MIN = MINIMUM CONCENTRATION
MAX = MAXIMUM CONCENTRATION
AVG = AVERAGE CONCENTRATION IN THE PERIOD JULY 1 - DECEMBER 31, 1990
UNIT = UNIT OF MEASUREMENT

NOTE: Values less than the detection limit are treated as zero.
Minimum, maximum and average values are cited to two decimal places.

TABLE 3.1
PROCESS EFFLUENT STREAM
MONTHLY AVERAGE FLOW (m3/day) FOR PULP AND PAPER MILLS WITH
ONE PROCESS EFFLUENT STREAM

| MILL | JUL 90 | AUG 90 | SEP 90 | OCT 90 | NOV 90 | DEC 90 |
|---|---|---|---|---|---|---|
| ABITIBI-P (I. Falls) | 69,777 | 70,007 | 70,037 | 65,149 | 65,114 | 68,265 |
| ABITIBI-P (Prov. P) | 46,403 | 49,848 | 50,194 | 47,209 | 47,640 | 49,792 |
| ABITIBI-P (T. Bay) | 49,922 | 51,206 | 50,264 | 47,411 | 48,239 | 46,566 |
| BEAVER WOOD FIBRE | 15,140 | 14,910 | 15,365 | 15,165 | 15,471 | 14,480 |
| BOISE (Ft. Frances) | 80,811 | 87,347 | 78,400 | 87,517 | 85,511 | 84,951 |
| BOISE (Kenora) | 53,677 | 58,172 | 58,894 | 56,424 | 52,546 | 48,523 |
| CP FOREST (Dryden) | 97,133 | 106,323 | 72,448 | 82,774 | 83,633 | 77,161 |
| CP FOREST (T. Bay) | 184,240 | 186,369 | 171,255 | 172,655 | --- | --- |
| DOMTAR (Cornwall) | 134,238 | 139,917 | 131,566 | 130,302 | 129,112 | 125,606 |
| DOMTAR (Red Rock) | 96,977 | 104,512 | 103,710 | 100,194 | 98,940 | 89,080 |
| DOMTAR (St. Cath) | 10,874 | 10,046 | 9,111 | 9,869 | 9,733 | 9,345 |
| DOMTAR (Trenton) | 4,345 | 3,953 | 3,694 | 4,047 | 4,165 | 4,005 |
| E.B. EDDY (Espanola) | 127,387 | 100,800 | 92,671 | 106,494 | 101,443 | 98,797 |
| E.B. EDDY (Ottawa) | 7,263 | 7,350 | 7,252 | 7,478 | 7,283 | 6,644 |
| JAMES RIVER-MARATHON | 58,757 | 60,345 | 61,425 | 60,994 | 55,897 | 56,778 |
| KIMBERLY-C (Hunts.) | 0 | 0 | 0 | 0 | 410 | 727 |
| KIMBERLY-C (St Cath) | 7,875 | 9,690 | 10,854 | 10,398 | 9,958 | 10,391 |
| KIMBERLY-C (Terr. B) | 90,874 | 101,063 | 74,372 | 91,329 | 87,285 | 84,307 |
| MALETTE | 58,385 | 52,444 | 52,296 | 55,275 | 50,724 | 45,166 |
| NORANDA FOREST | 22,507 | 22,956 | 22,877 | 23,852 | • | 23,658 |
| QUEBEC AND ONTARIO | 63,648 | 67,106 | --- | --- | --- | 62,072 |
| ST. MARYS PAPER | 35,142 | 36,970 | 35,409 | 36,685 | 36,335 | 36,118 |
| SPRUCE FALLS | 96,652 | 102,955 | 94,004 | 85,174 | 77,247 | 78,573 |
| STRATHCONA | 2,839 | 2,560 | 2,938 | 2,764 | 2,766 | 2,743 |
| TRENT VALLEY (PBI) | 3,382 | 3,812 | 3,653 | 4,310 | 3,945 | 3,888 |

NOTE: (1) --- = mill on strike
• = missing data

TABLE 3.2
PROCESS EFFLUENT STREAM
MONTHLY AVERAGE FLOW (m3/day) FOR PULP AND PAPER MILLS WITH
TWO PROCESS EFFLUENT STREAMS

| MILL | CTRLPT | JUL 90 | AUG 90 | SEP 90 | OCT 90 | NOV 90 | DEC 90 |
|---|---|---|---|---|---|---|---|
| ABITIBI-P (Ft. Will) | 0100 | 25,124 | 24,686 | 24,461 | 20,434 | 24,762 | 26,609 |
| ABITIBI-P (Ft. Will) | 0200 | 3,798 | 4,792 | 4,098 | 3,183 | 5,224 | 3,973 |
| MACMILLAN BLOEDEL | 1200 | 8,022 | 8,503 | 8,006 | 3,970 | 8,415 | 7,328 |
| MACMILLAN BLOEDEL | 1300 | 5,273 | 5,833 | 4,212 | 3,551 | 3,775 | 4,567 |

TABLE 4.0

AVERAGE DAILY LOADING (kg/day)

FOR DAILY, TWICE WEEKLY AND WEEKLY PARAMETERS

IN PROCESS EFFLUENT STREAMS

(JULY 1 - DECEMBER 31, 1990)

| MILL | ALUMINUM | AOX | BOD5 | COD | DOC | AMMONIA+ AMMONIUM | NITRATE+ NITRITE | TOTAL KJELDAHL NITROGEN | PHOSPHORUS | DICHLORO-DEHYDRO-ABIETIC ACID | DEHYDRO-ABIETIC ACID | TOTAL SUSPENDED SOLIDS | VOLATILE SUSPENDED SOLIDS | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABITIBI-P (I. Falls) | 180.1 | | 42956 | | 46014 | 11.3 | 16.0 | 263.9 | 77.7 | | 761.6 | 7885 | | 7.5 |
| ABITIBI-P (Ft. Will) | 11.9 | | 12242 | | 10526 | 5.7 | 2.9 | 104.3 | 35.3 | | 134.9 | 1263 | | 1.8 |
| ABITIBI-P (Prov. P) | 72.4 | | 4476 | | 2928 | 6.8 | 10.8 | 46.5 | 3.9 | | 28.9 | 1575 | | 1.4 |
| ABITIBI-P (T. Bay) | 63.7 | | 29112 | | 29426 | 4.2 | 6.8 | 92.6 | 13.0 | | 67.9 | 1782 | | 4.4 |
| BEAVER WOOD FIBRE | 10.3 | | 2055 | | 1036 | 1.0 | 1.7 | 36.0 | 2.5 | | 17.2 | 634 | | 0.5 |
| BOISE (Ft. Frances) | 90.6 | 1865 | 9105 | 66150 | | 5.9 | 5.5 | 763.1 | 158.3 | 13.0 | 42.9 | 11119 | 10234 | 13.3 |
| BOISE (Kenora) | 21.8 | | 30656 | 95396 | | 2.0 | 7.2 | 96.3 | 17.3 | | 233.7 | 3327 | | 2.7 |
| CP FOREST (Dryden) | 104.5 | 1543 | 2376 | 41462 | | 70.1 | 1392.7 | 178.1 | 46.1 | 1.8 | 7.9 | 4516 | 4090 | 9.2 |
| CP FOREST (T. Bay) | 704.9 | 4172 | 48321 | 171503 | | 16.5 | 0.0 | 267.1 | 113.5 | 13.9 | 315.2 | 13802 | | 22.5 |
| DOMTAR (Cornwall) | 244.9 | 461 | 19824 | 56325 | | 38.5 | 41.6 | 505.5 | 44.9 | 0.9 | 61.0 | 9494 | | 5.9 |
| DOMTAR (Red Rock) | 254.9 | 173 | 14890 | 39685 | | 38.1 | 7.1 | 179.1 | 24.3 | 0.1 | 89.9 | 5810 | | 3.5 |
| DOMTAR (St. Cath) | 10.4 | | 676 | 2605 | | 0.7 | 2.2 | 18.6 | 0.3 | | 10.1 | 341 | | 0.2 |
| DOMTAR (Trenton) | 12.5 | | 5053 | 13766 | | 1.9 | 3.3 | 39.5 | 5.4 | | 4.9 | 660 | | 0.7 |
| E.B. EDDY (Espanola) | 65.2 | 866 | 1761 | | 11641 | 125.1 | 20.4 | 449.9 | 61.8 | 0.1 | 3.1 | 2173 | 1373 | 8.6 |
| E.B. EDDY (Ottawa) | 22.8 | | 1127 | 2573 | | 1.2 | 1.8 | 22.7 | 0.8 | | 3.2 | 343 | | 0.2 |
| JAMES RIVER-MARATHON | 16.5 | 2041 | 11467 | 45042 | | 150.6 | 0.0 | 172.2 | 32.5 | 1.2 | 2.1 | 2721 | | 3.5 |
| KIMBERLY-C (Hunts.) | 0.0 | | 4 | 54 | | 0.0 | | 2.4 | 0.1 | | 0.0 | 0 | | 0.0 |
| KIMBERLY-C (St Cath) | 1.2 | | 336 | 1117 | | 0.2 | 0.0 | 17.9 | 1.0 | | 0.8 | 59 | | 0.2 |
| KIMBERLY-C (Terr. B) | 51.0 | 1963 | 1387 | 43939 | | 96.5 | 21.2 | 424.1 | 43.6 | 0.2 | 1.0 | 3580 | 3440 | 6.4 |
| MACMILLAN BLOEDEL | 6.7 | | 28729 | | 27537 | 120.7 | 2754.2 | 567.1 | 60.3 | | 1.4 | 2719 | 1868 | 12.6 |
| MALETTE | 193.8 | 1100 | 7612 | 34048 | | 20.3 | 7.6 | 97.8 | 24.9 | 6.2 | 36.9 | 2042 | | 7.9 |
| NORANDA FOREST | 71.9 | 114 | 3754 | | 1630 | 2.1 | 9.5 | 27.3 | 2.0 | | 3.5 | 1059 | 603 | 2.3 |
| QUEBEC AND ONTARIO | 20.0 | | 2164 | | 1964 | 254.1 | 29.7 | 352.6 | 33.7 | | 18.1 | 3463 | 2445 | 6.8 |
| ST. MARYS PAPER | 82.8 | | 8012 | 18883 | | 8.0 | 2.4 | 46.1 | 35.8 | | 79.8 | 5587 | | 2.2 |
| SPRUCE FALLS | 24.3 | | 38501 | 70035 | | 0.0 | 6.9 | 304.4 | 23.4 | | 101.5 | 6616 | | 10.2 |
| STRAITCONA | 1.5 | | 134 | 950 | | 10.8 | 0.1 | 34.8 | 1.6 | | 0.8 | 188 | 193 | 0.1 |
| TRENT VALLEY (PBI) | 28.5 | | 1523 | 3431 | | 0.4 | 0.3 | 12.4 | 1.3 | | 1.3 | 523 | | 0.5 |
| TOTALS: | 2370.3 | 14318.4 | 327691.8 | 706971.4 | 132706.5 | 991.7 | 4350.4 | 6124.0 | 864.5 | 37.1 | 2150.4 | 93292.6 | 24246.3 | 139.0 |

Figure 1.1
Sulphate (Kraft) Mill Process Effluent
Monthly Average Concentration of 5–Day Biological Oxygen Demand

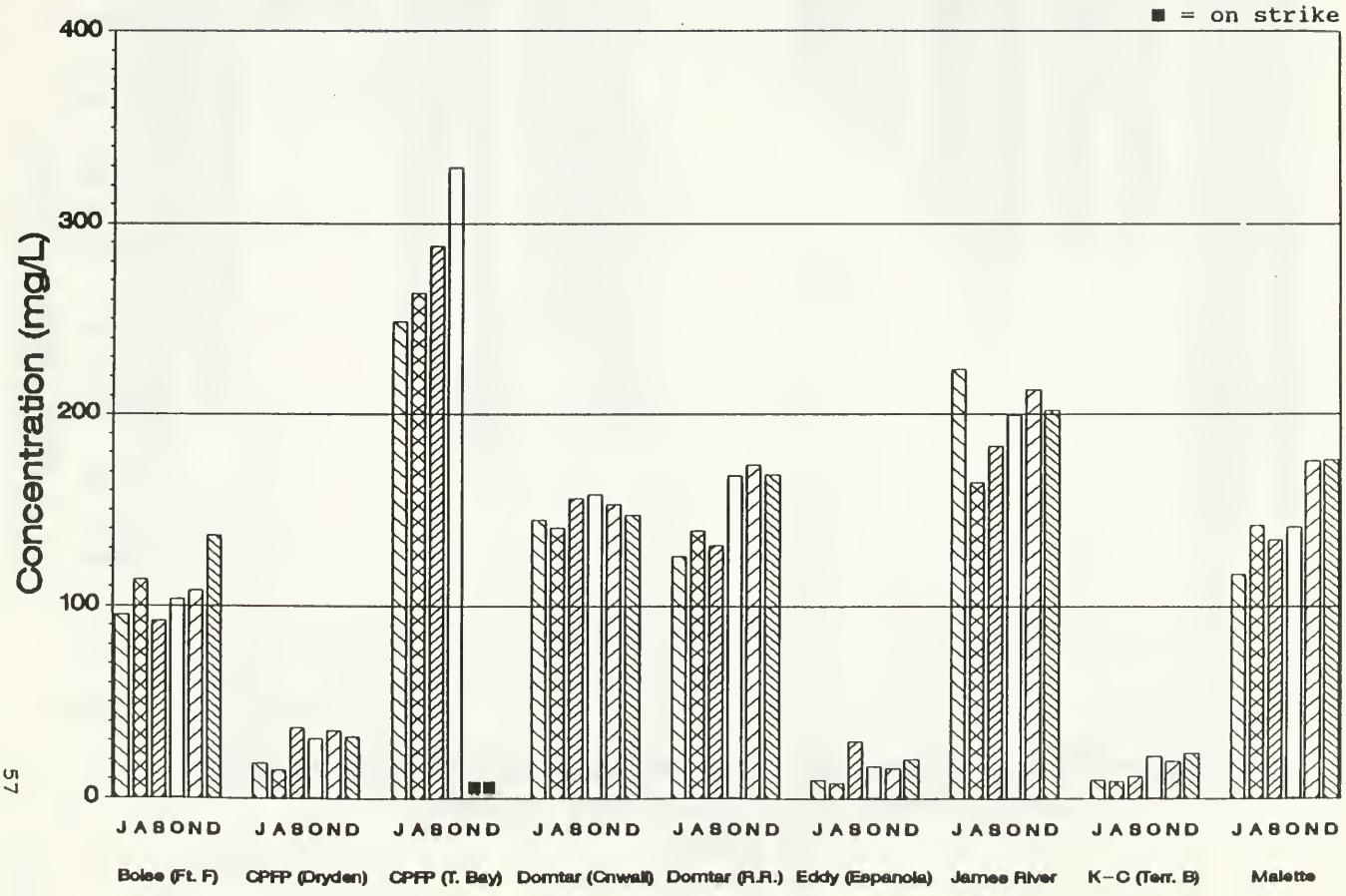


Figure 1.2

Sulphite – Mechanical Mill Process Effluent

Monthly Average Concentration of 5 – Day Biological Oxygen Demand

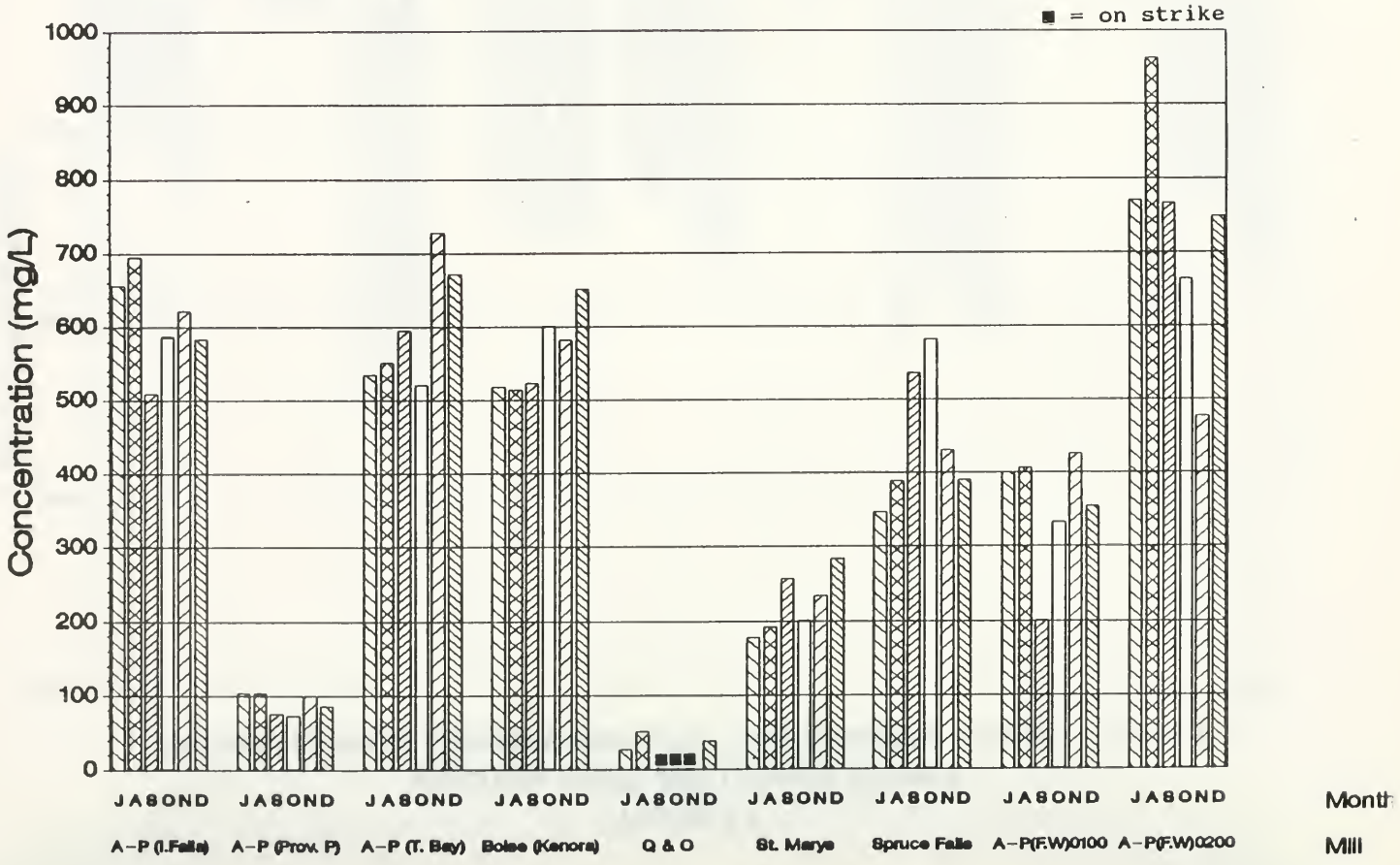


Figure 1.3
Corrugating Mill Process Effluent
Monthly Average Concentration of 5–Day Biological Oxygen Demand

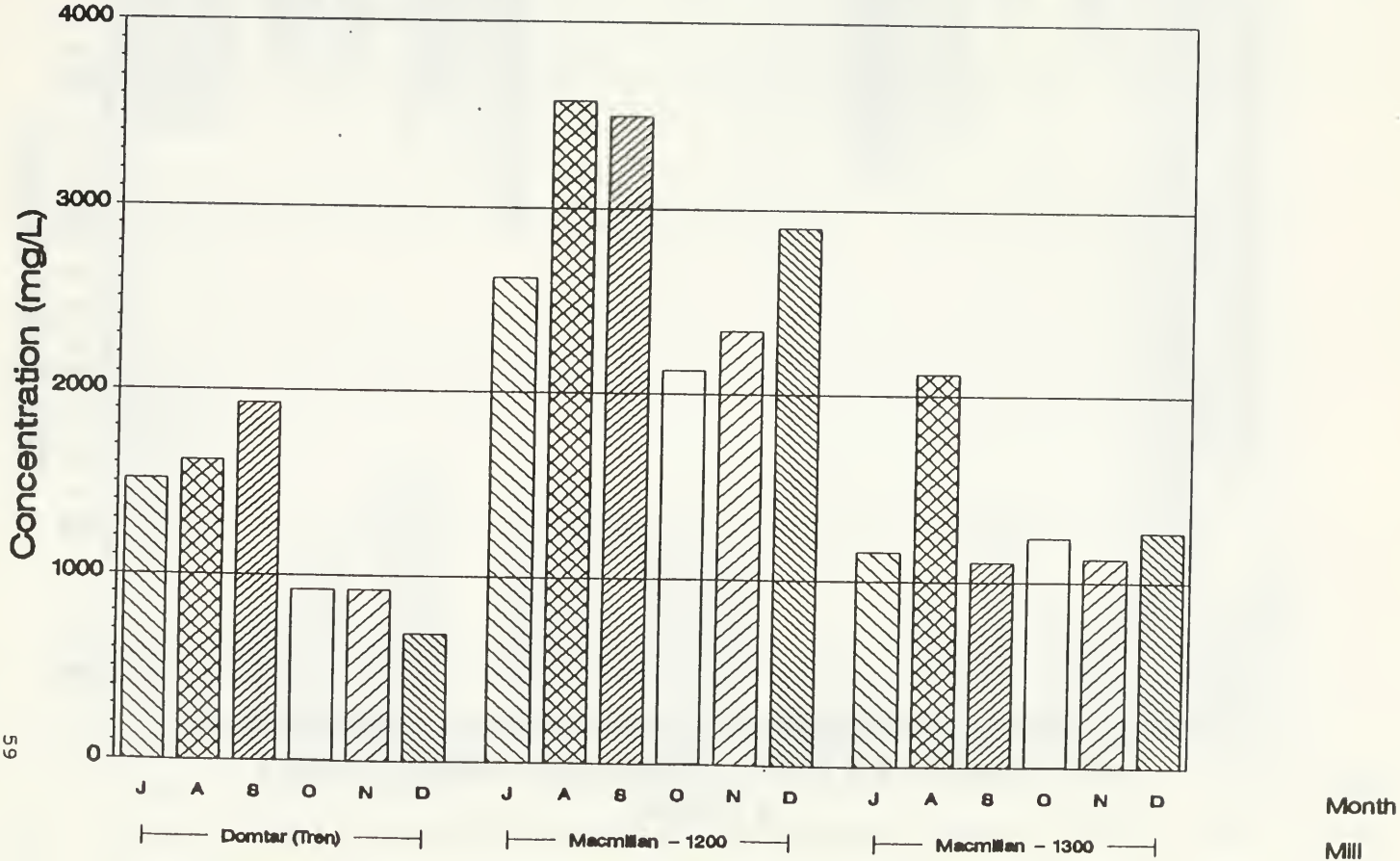


Figure 1.4

Deinking – Board – Fine Papers – Tissue Mill Process Effluent

Monthly Average Concentration of 5 – Day Biological Oxygen Demand

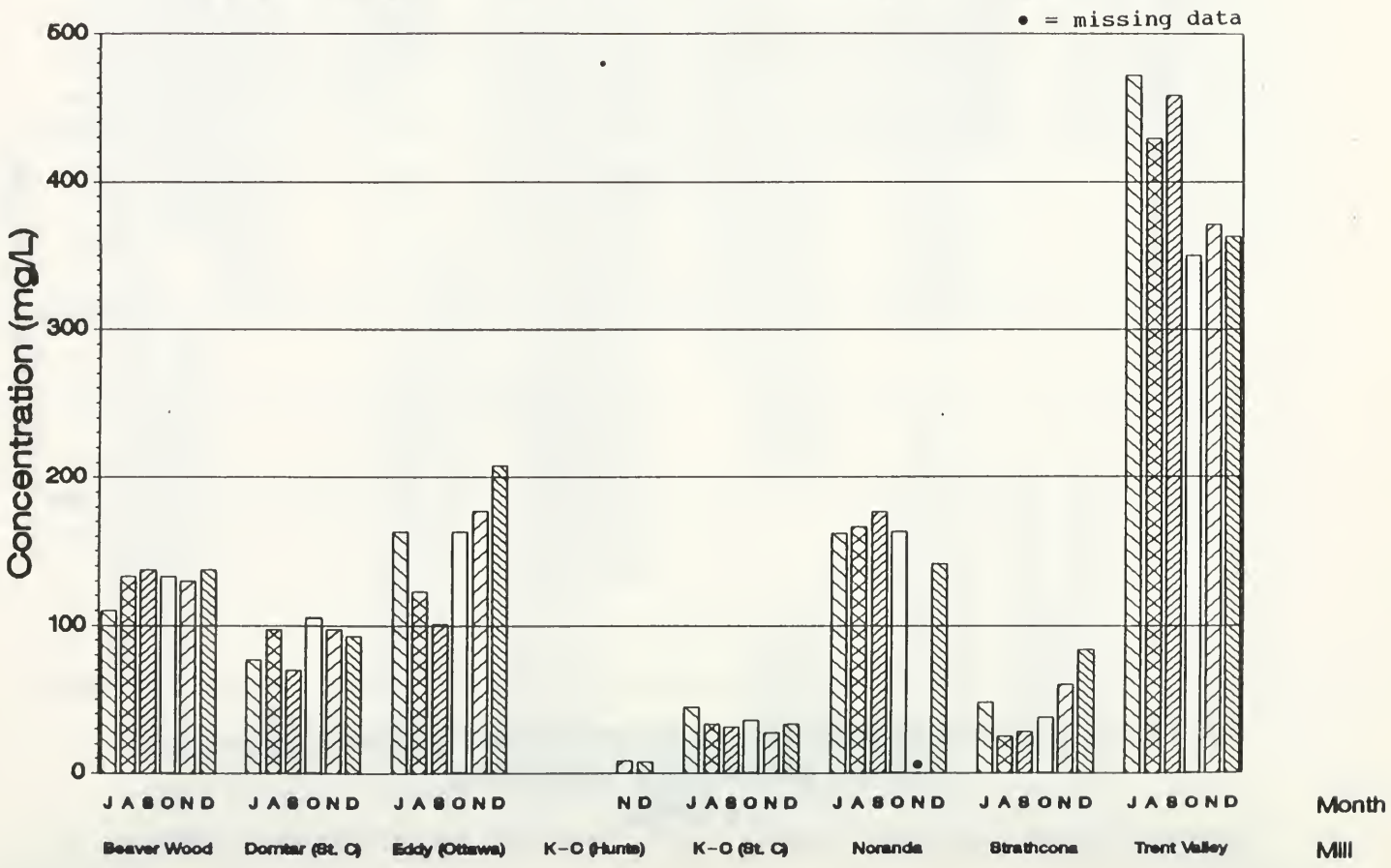


Figure 1.5
Sulphate (Kraft) Mill Process Effluent
Monthly Average Concentration of Total Suspended Solids

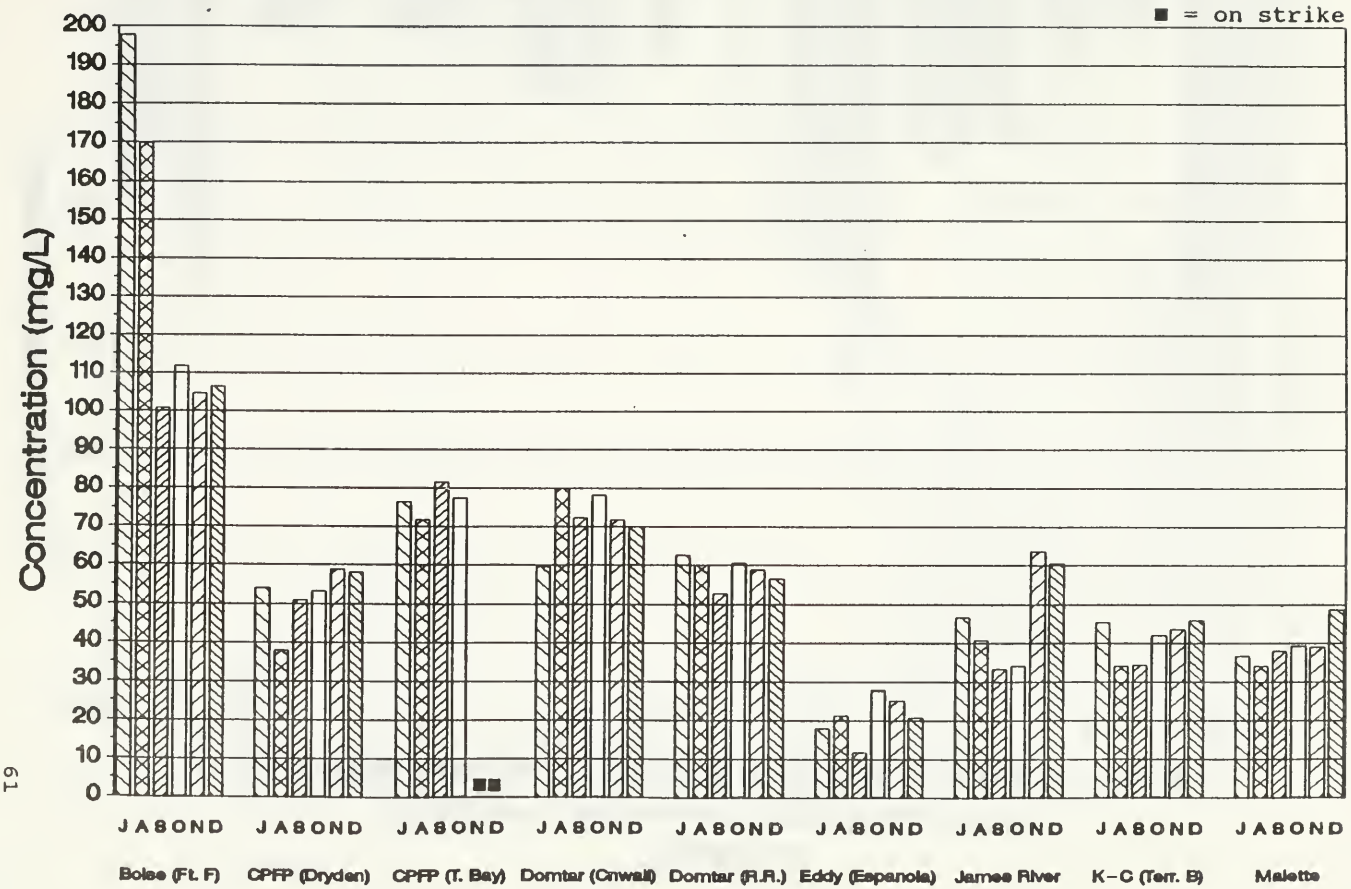


Figure 1.6

Sulphite – Mechanical Mill Process Effluent

Monthly Average Concentration of Total Suspended Solids

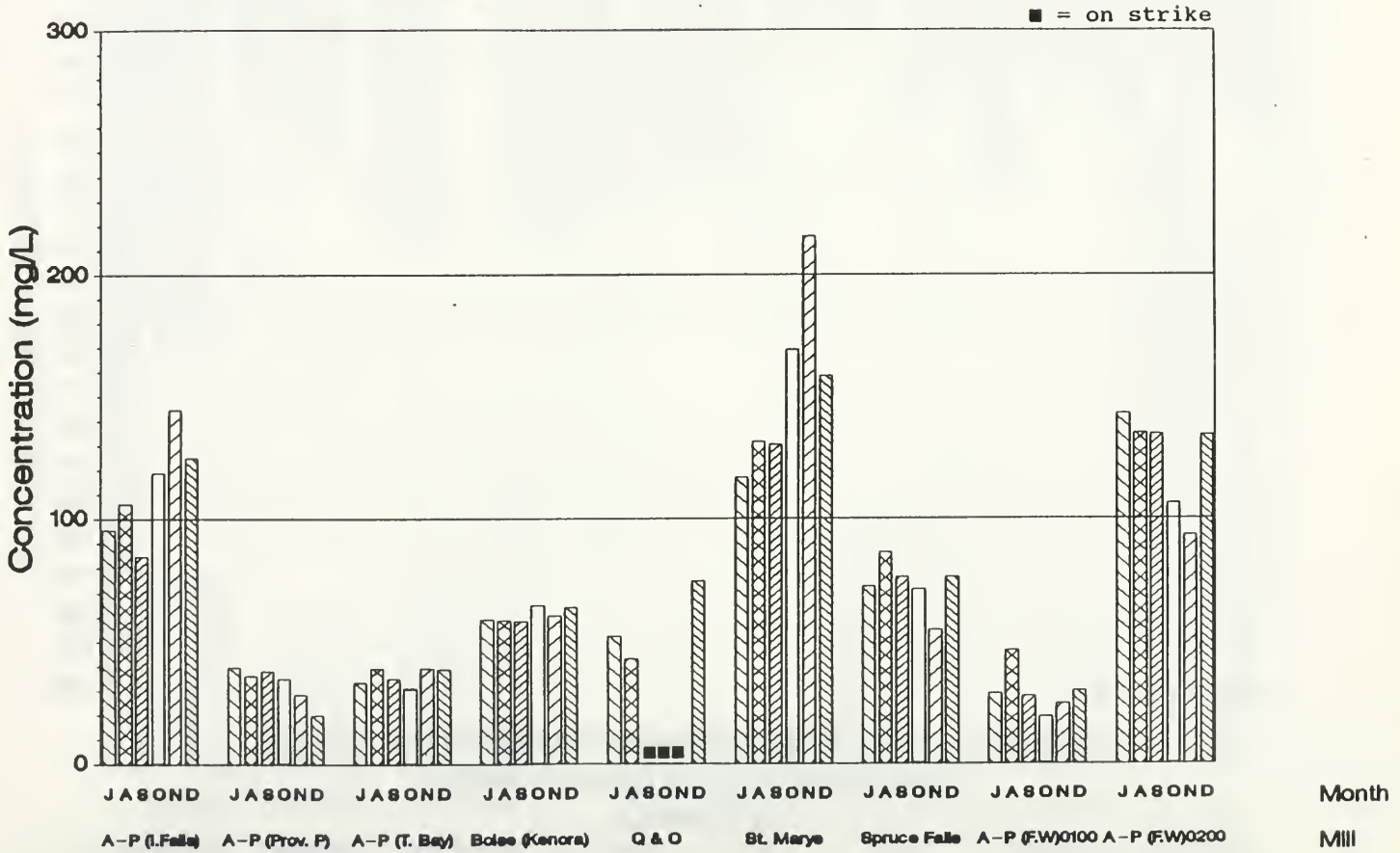


Figure 1.7
Corrugating Mill Process Effluent
Monthly Average Concentration of Total Suspended Solids

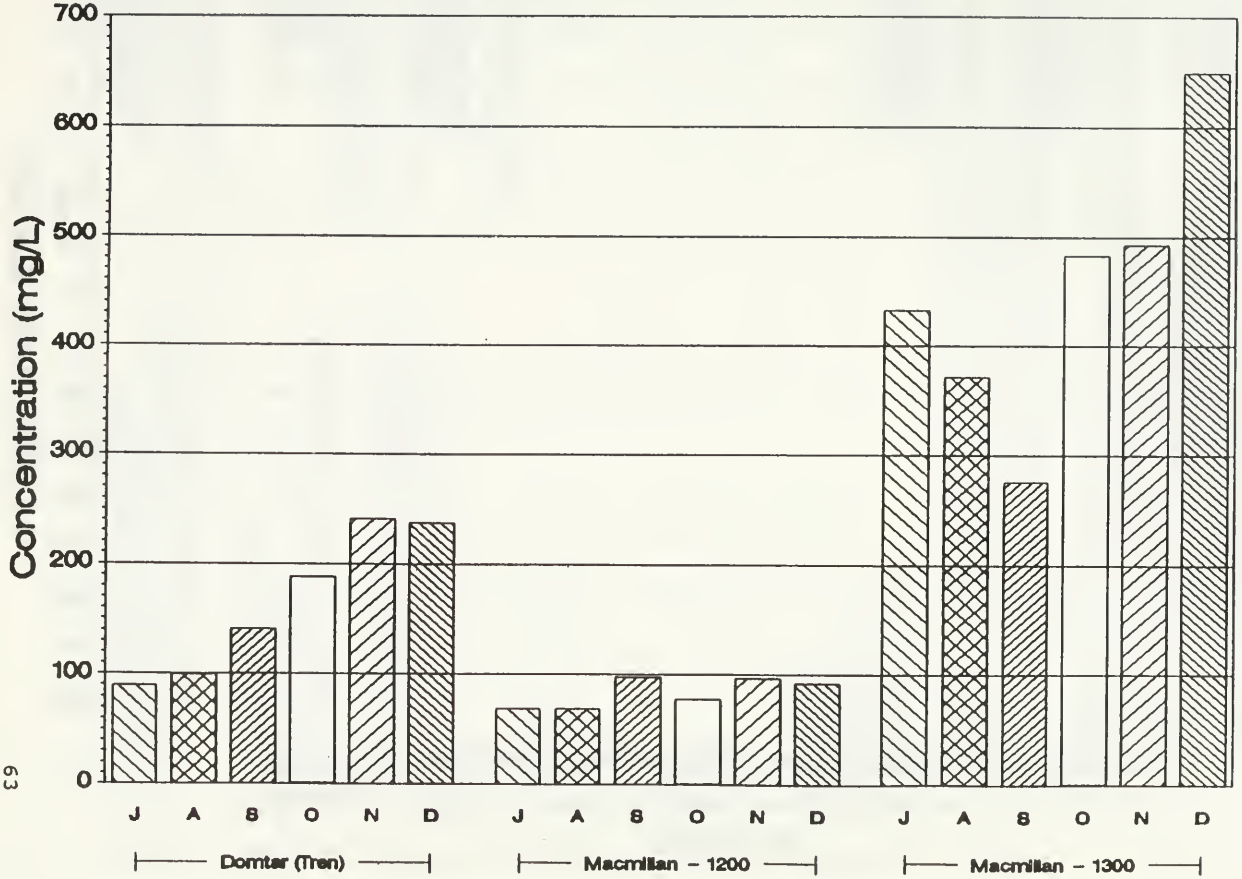
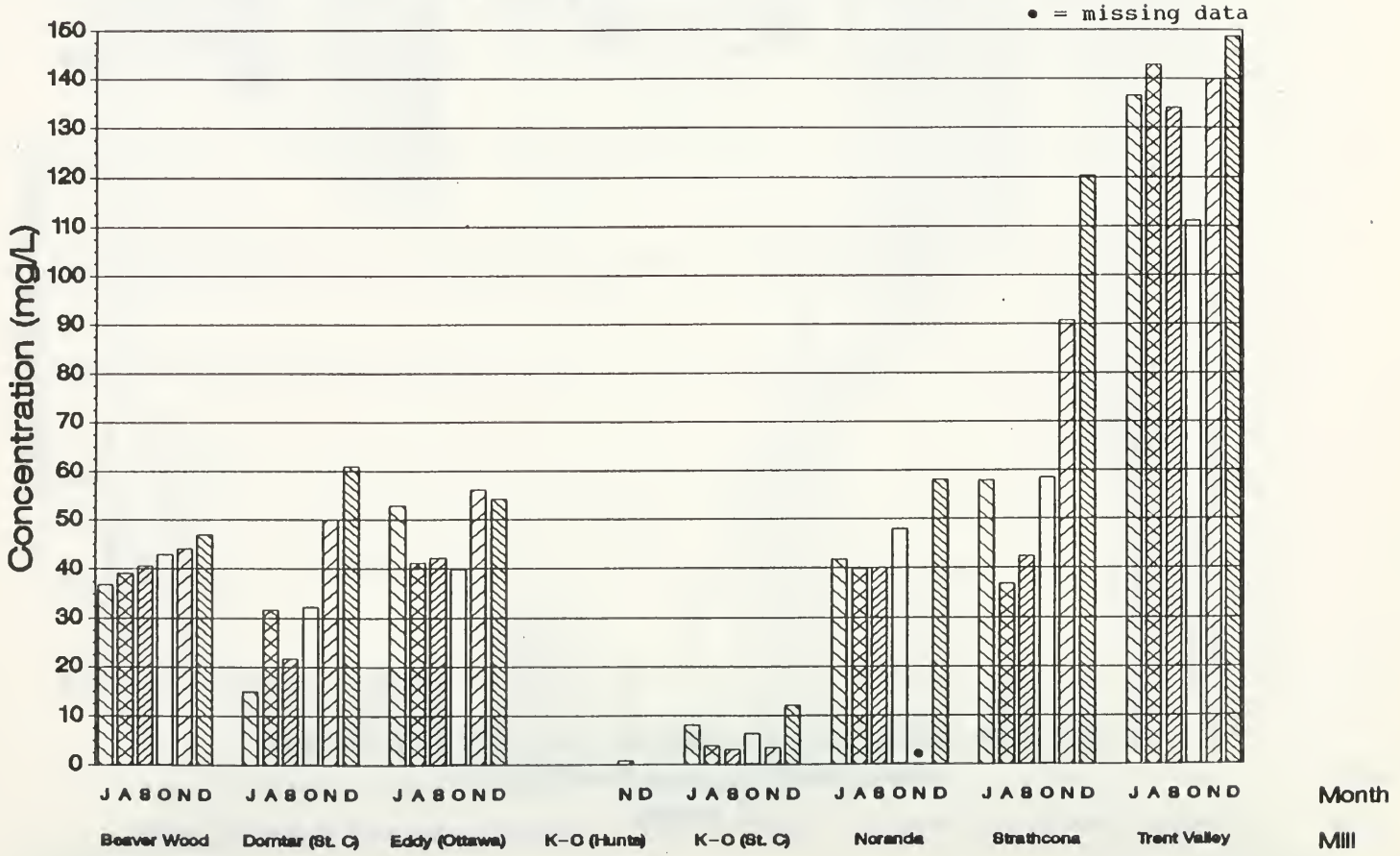


Figure 1.8

Deinking – Board – Fine Papers – Tissue Mill Process Effluent

Monthly Average Concentration of Total Suspended Solids



## Figure 1.9
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of Adsorbable Organic Halide

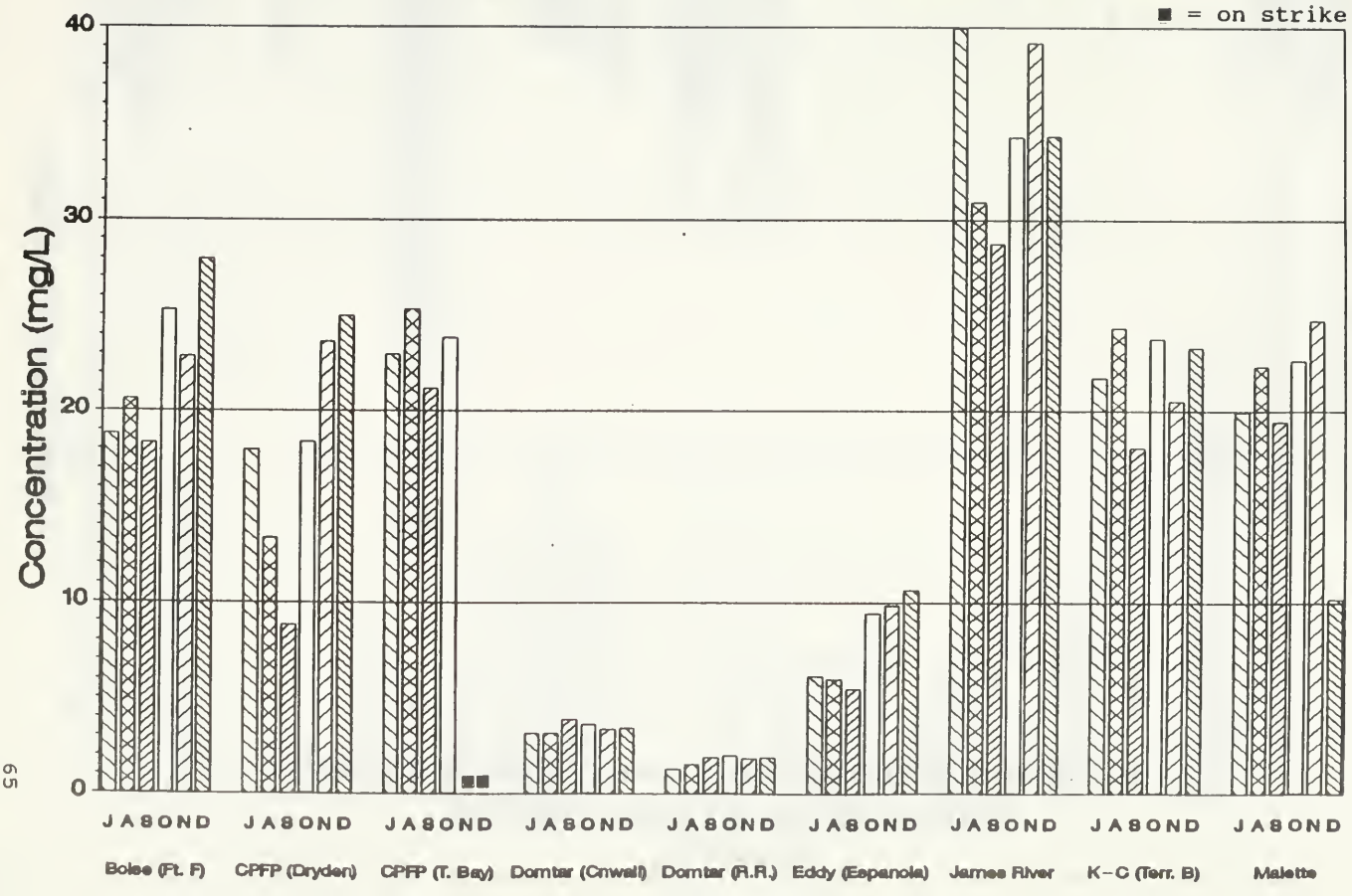
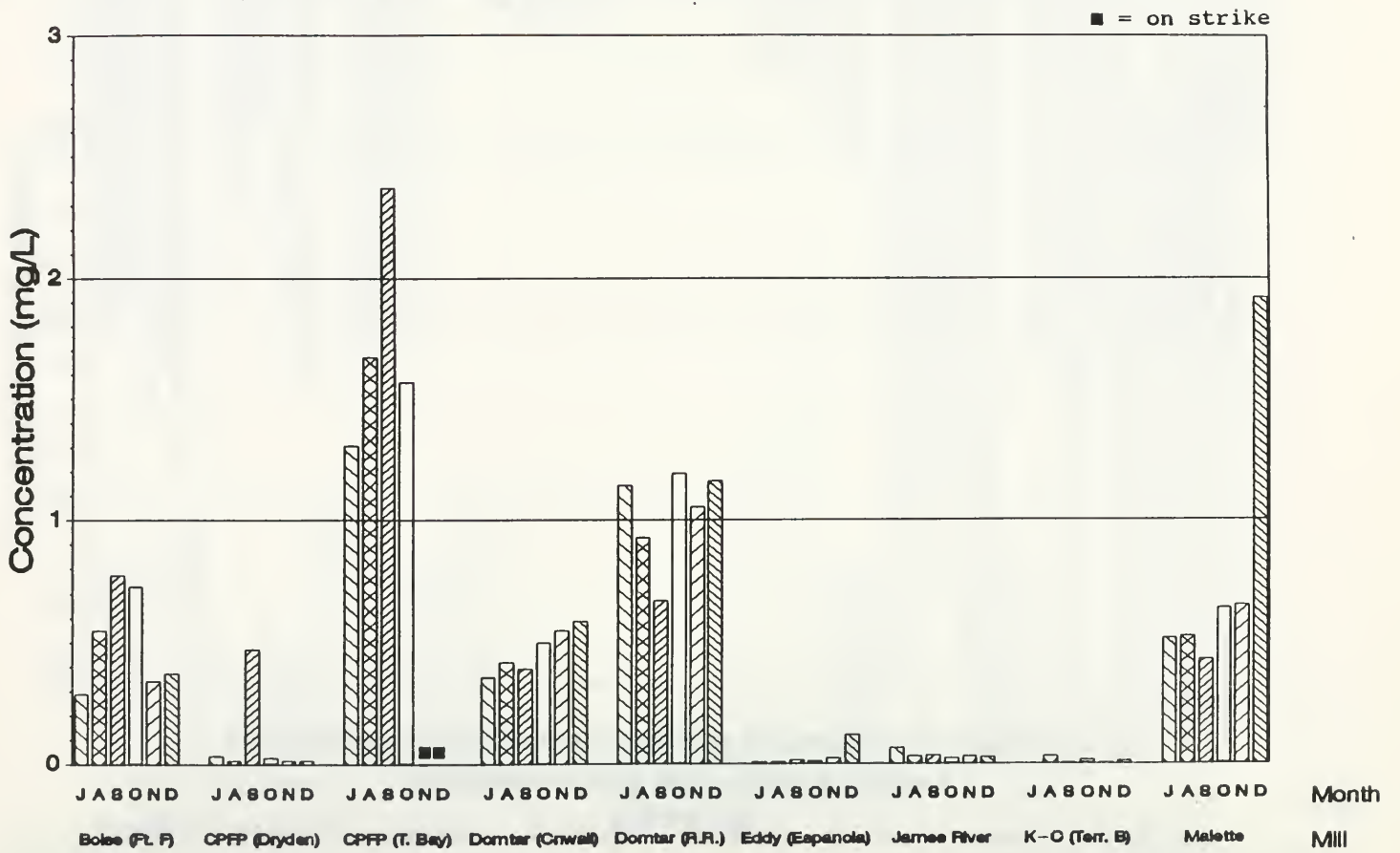
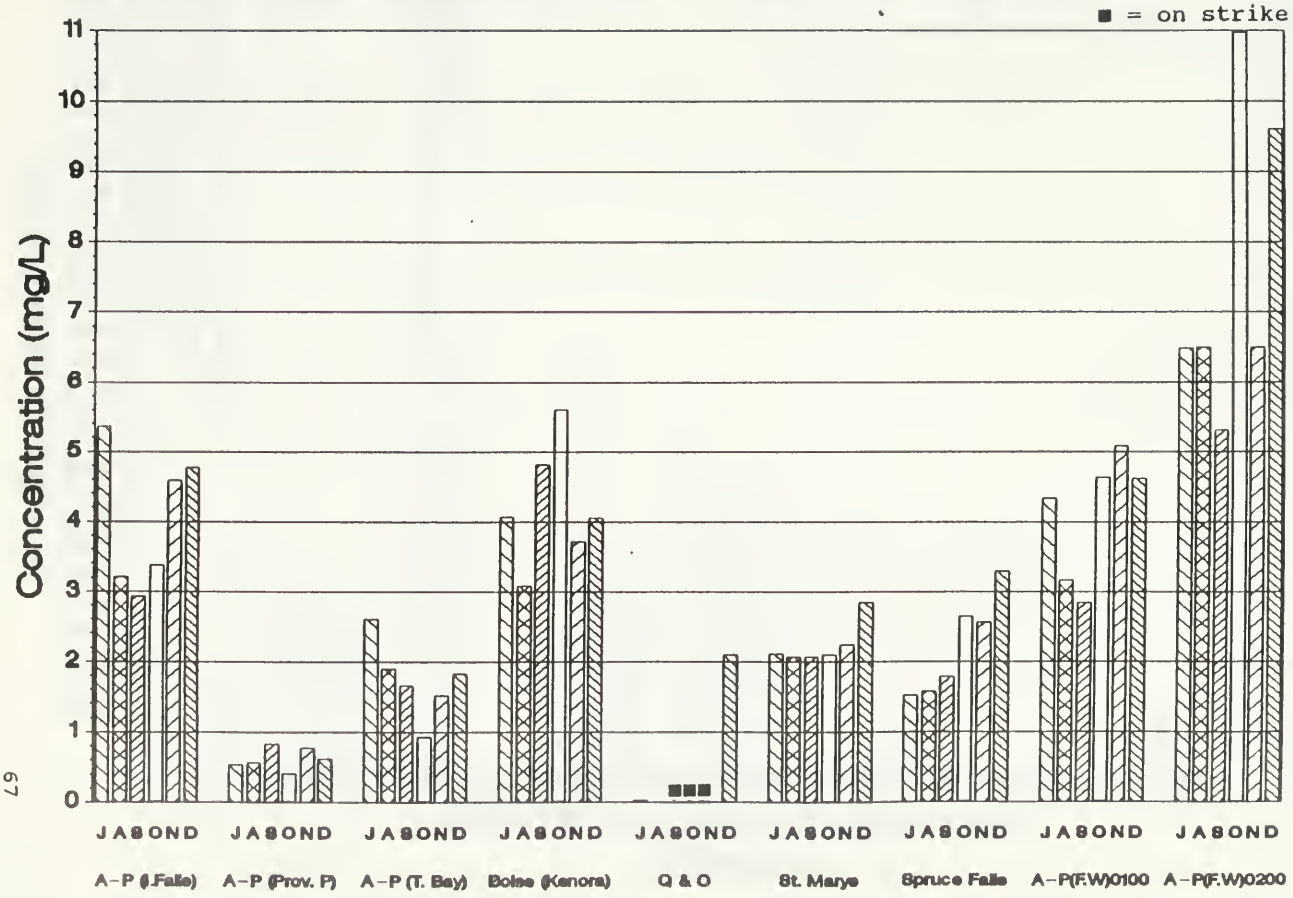


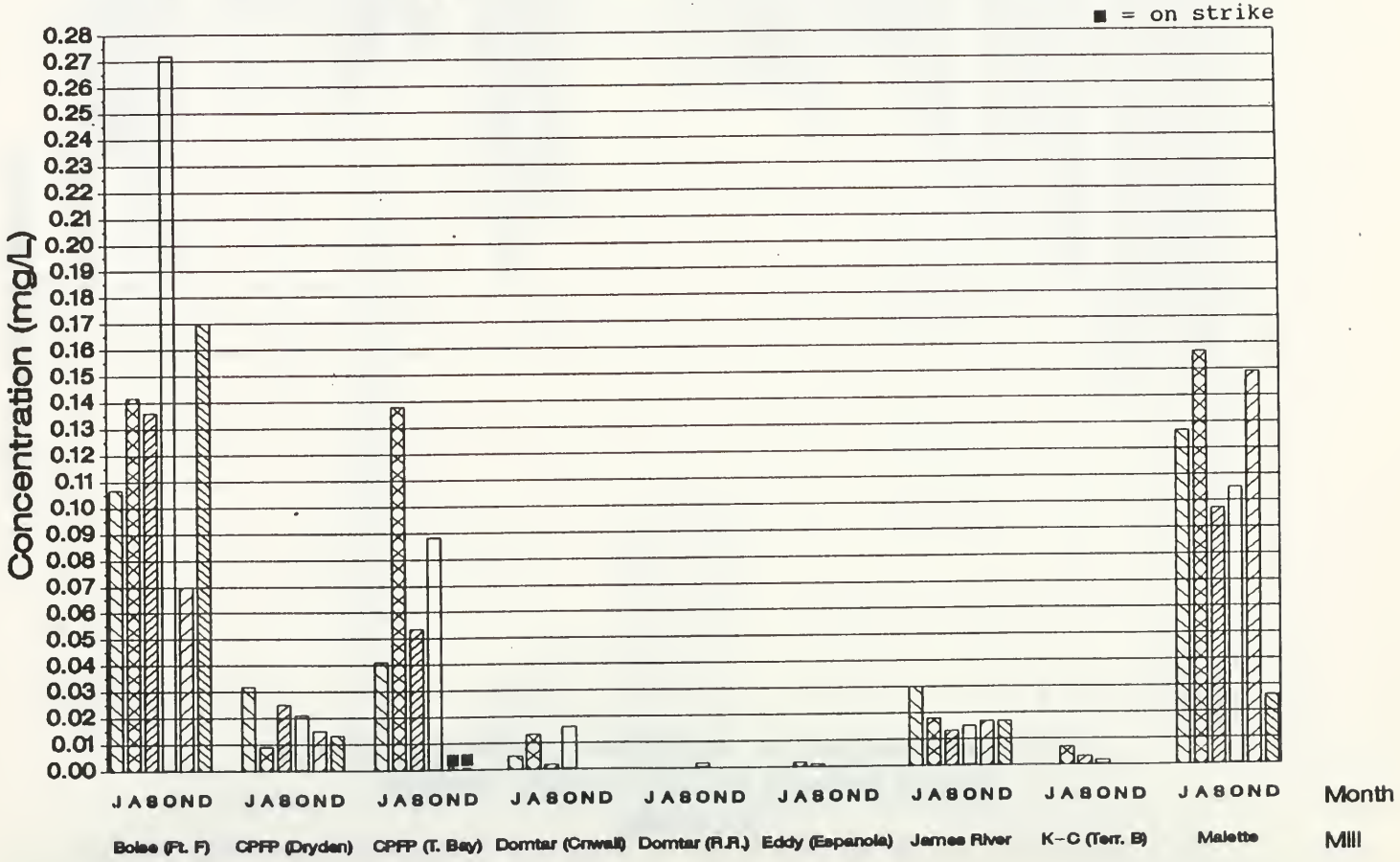
Figure 1.10
Sulphate (Kraft) Mill Process Effluent
Monthly Average Concentration of Dehydroabietic Acid



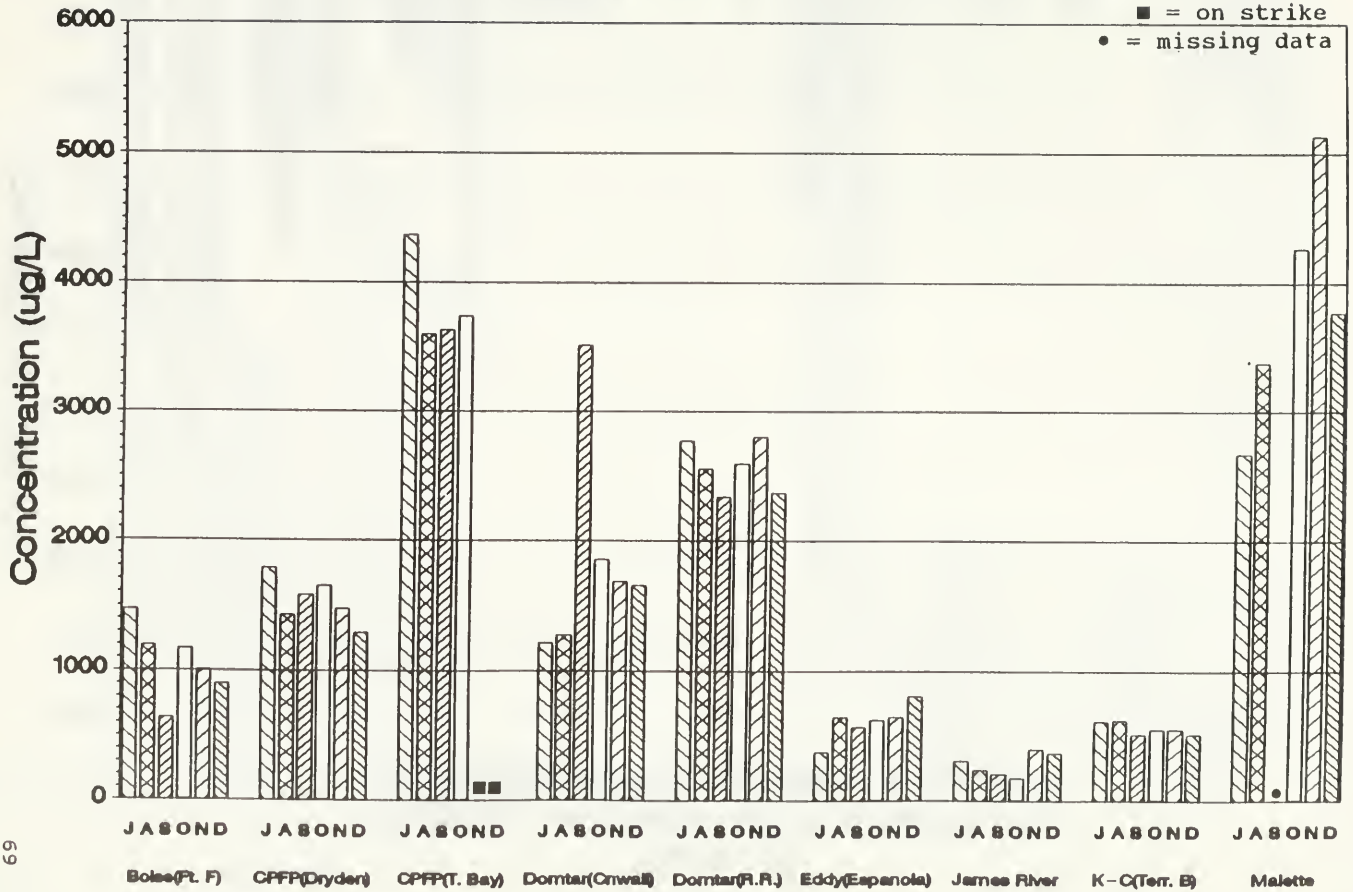
## Figure 1.11
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Concentration of Dehydroabietic Acid



# Figure 1.12
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of Dichlorodehydroabietic Acid



## Figure 1.13
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of Aluminum



# Figure 1.14
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Concentration of Aluminum

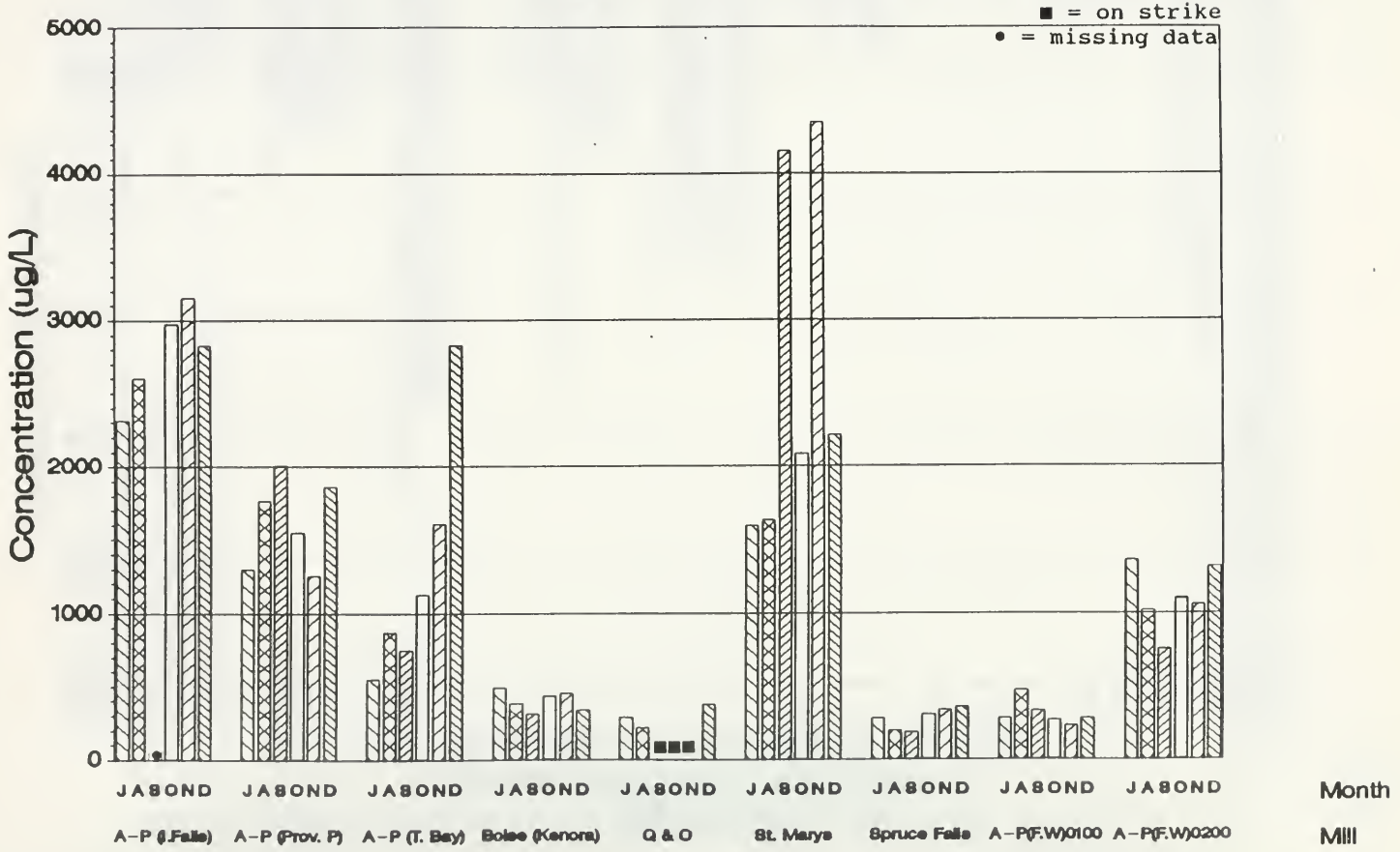
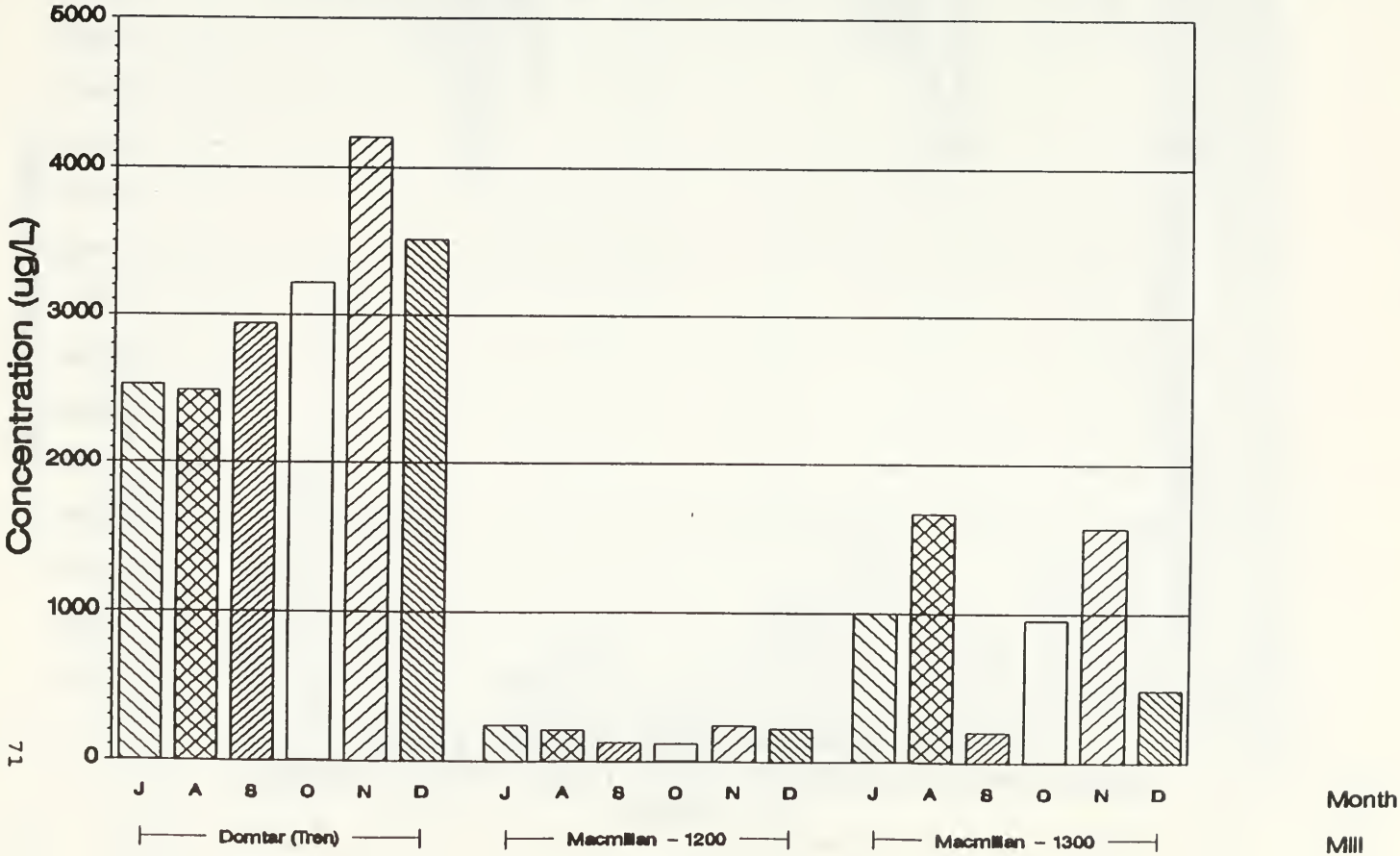
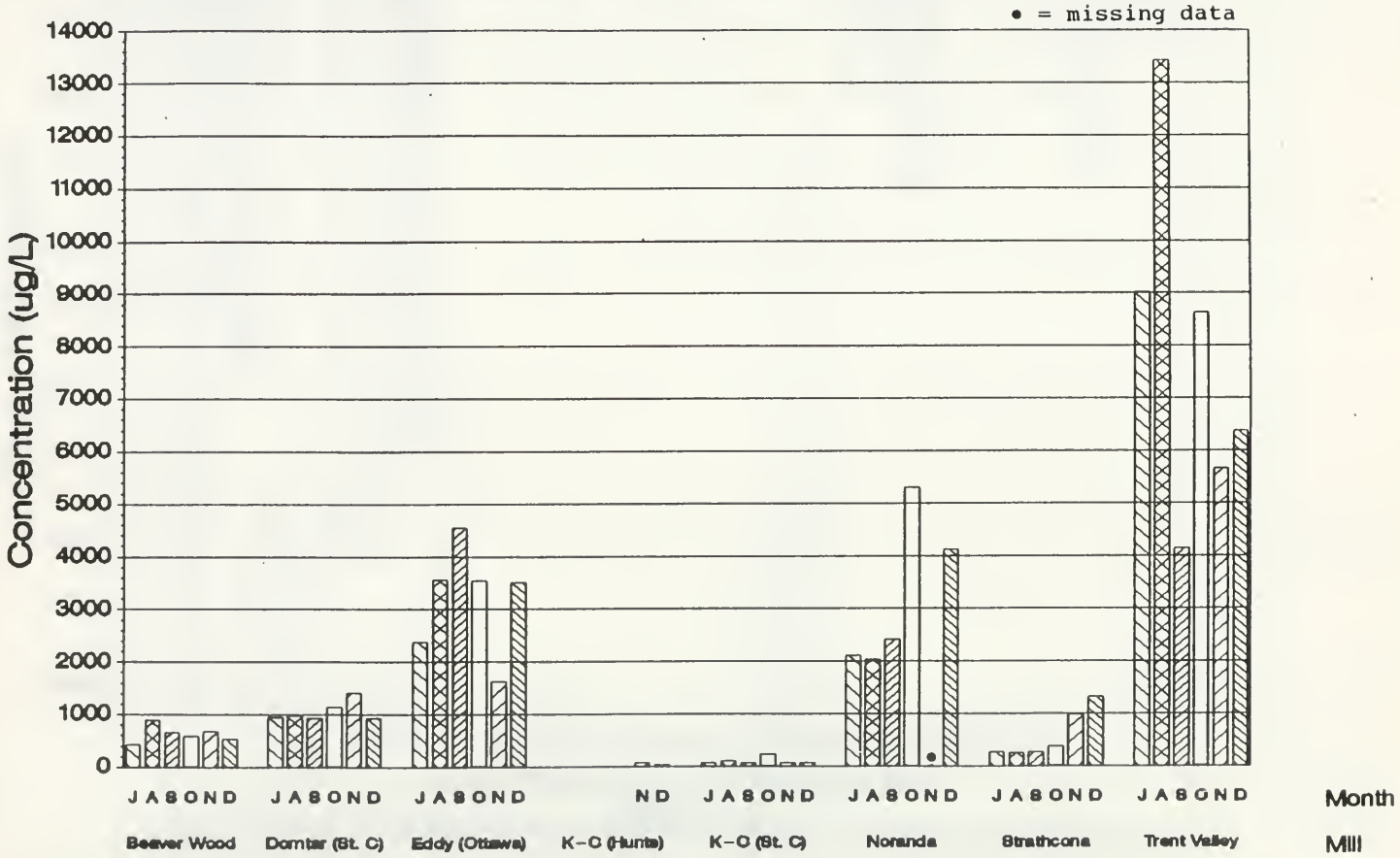


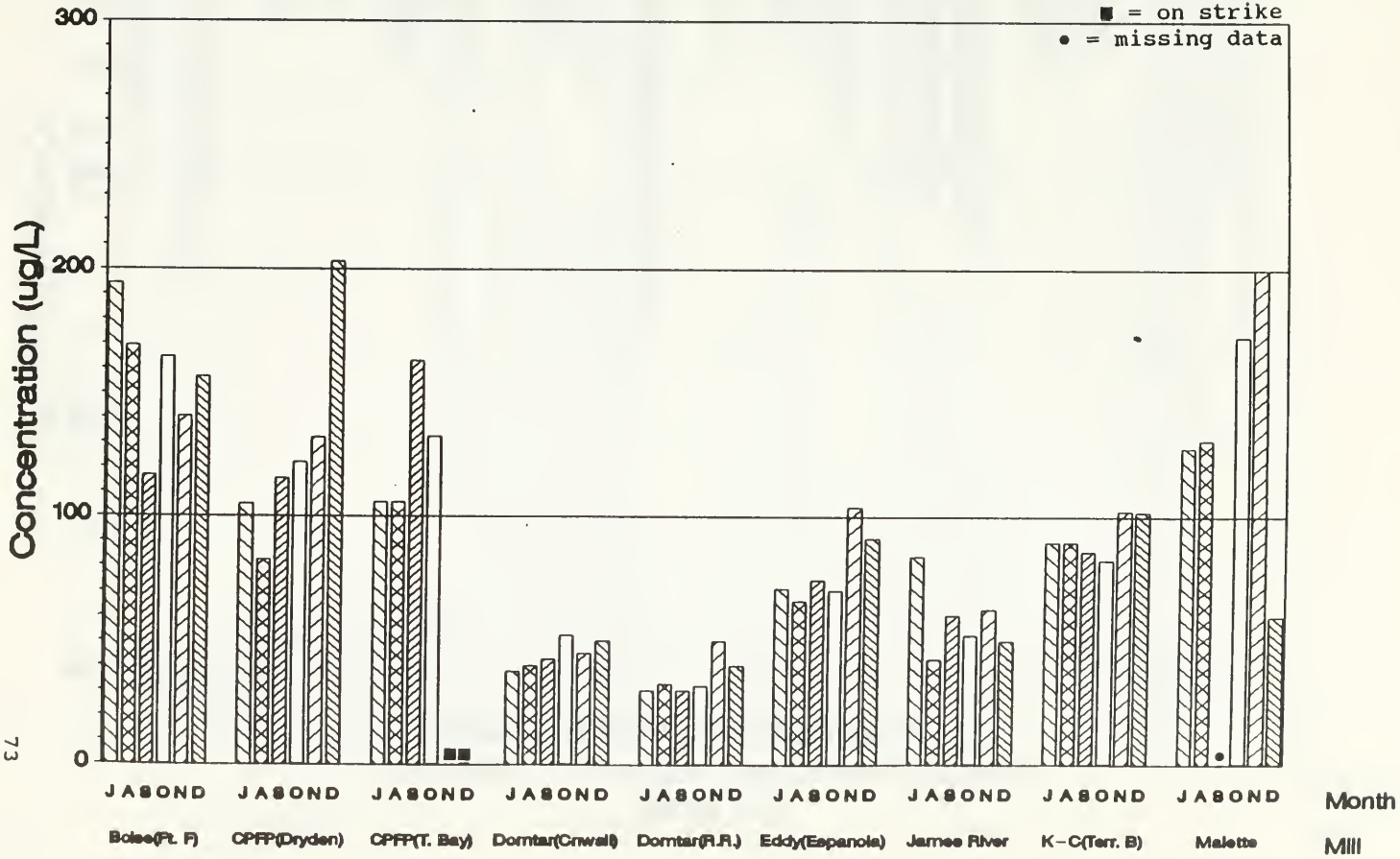
Figure 1.15
Corrugating Mill Process Effluent
Monthly Average Concentration of Aluminum



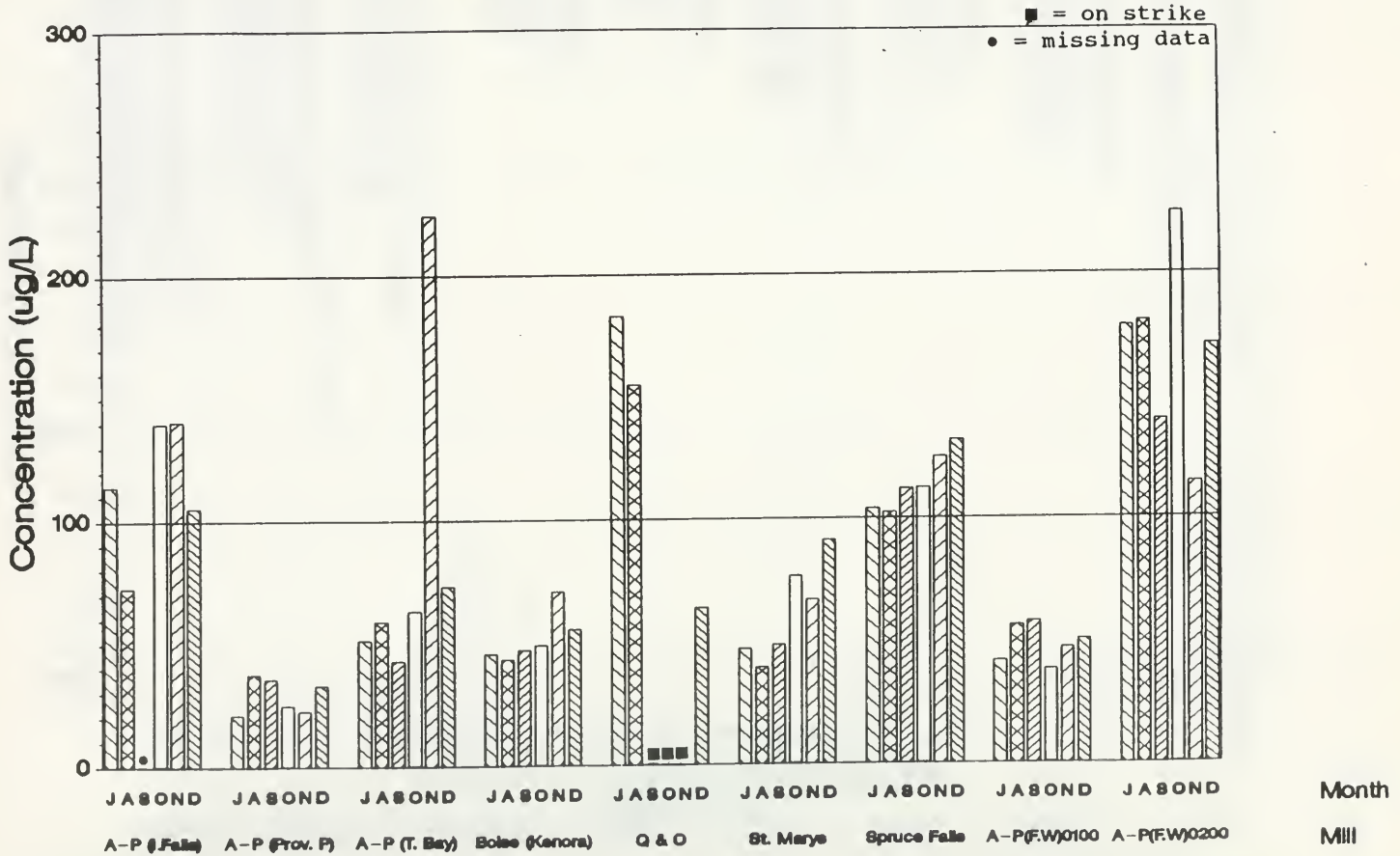
# Figure 1.16
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Concentration of Aluminum



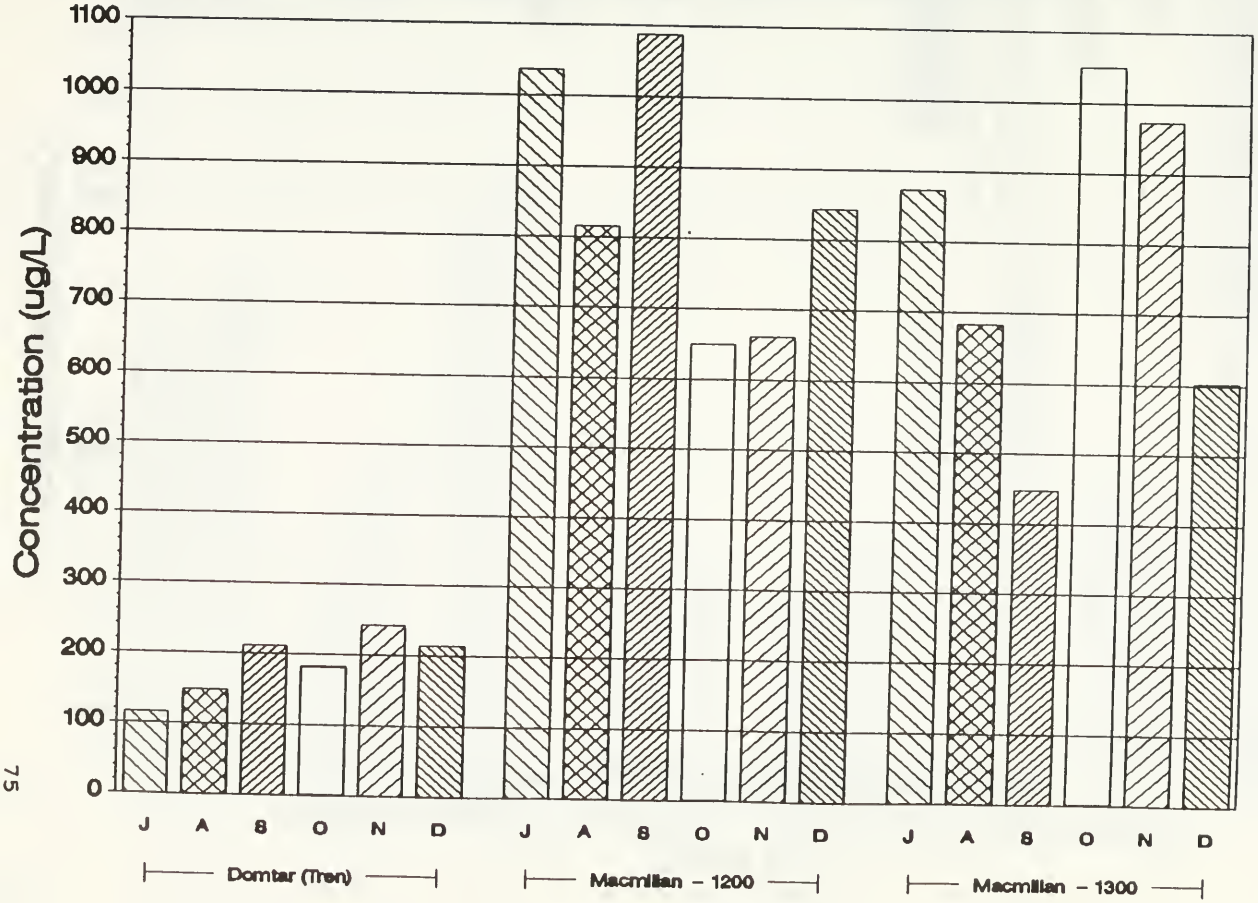
## Figure 1.17
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of Zinc



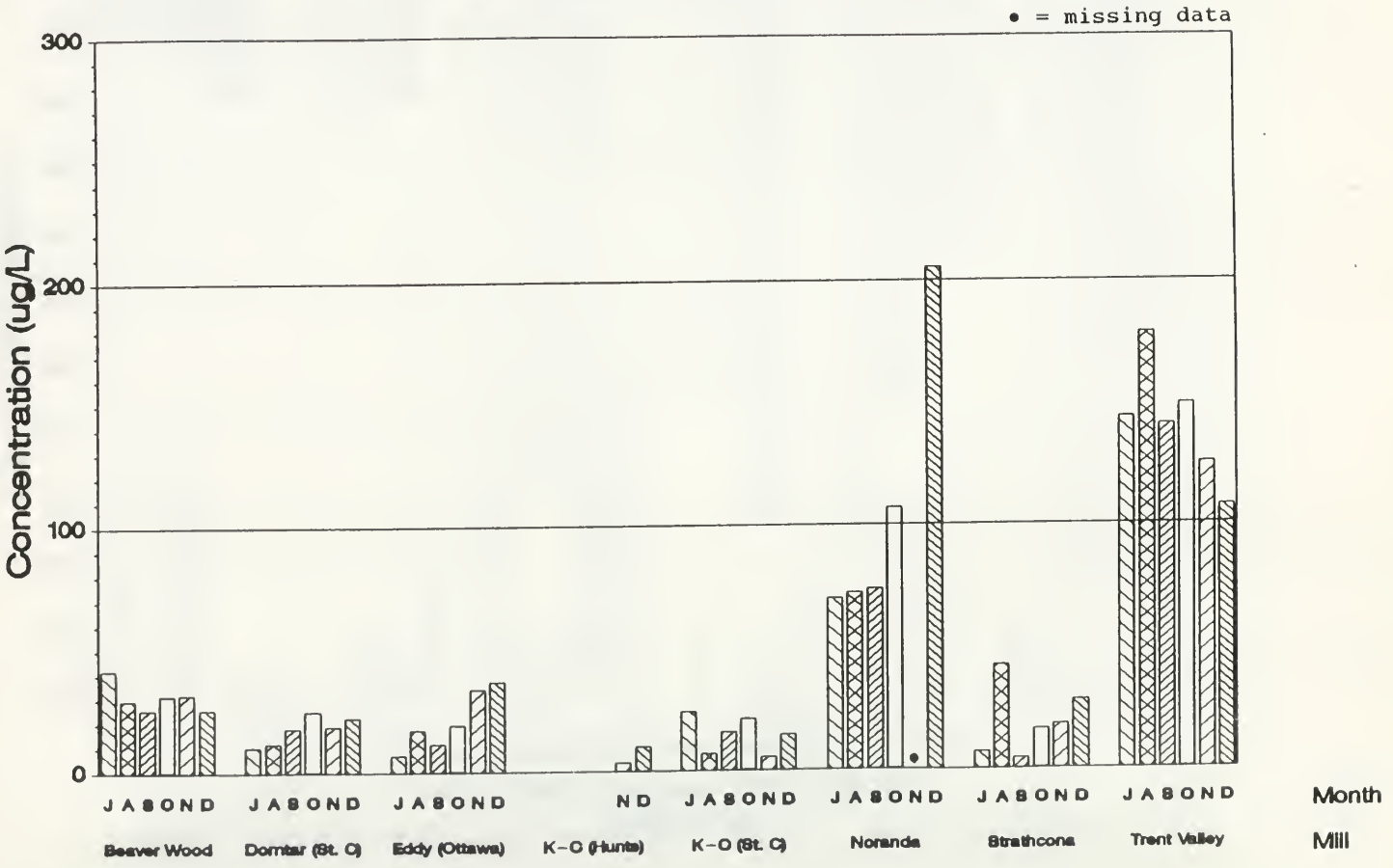
# Figure 1.18
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Concentration of Zinc



## Figure 1.19
## Corrugating Mill Process Effluent
## Monthly Average Concentration of Zinc



# Figure 1.20
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Concentration of Zinc



## Figure 1.21
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of COD

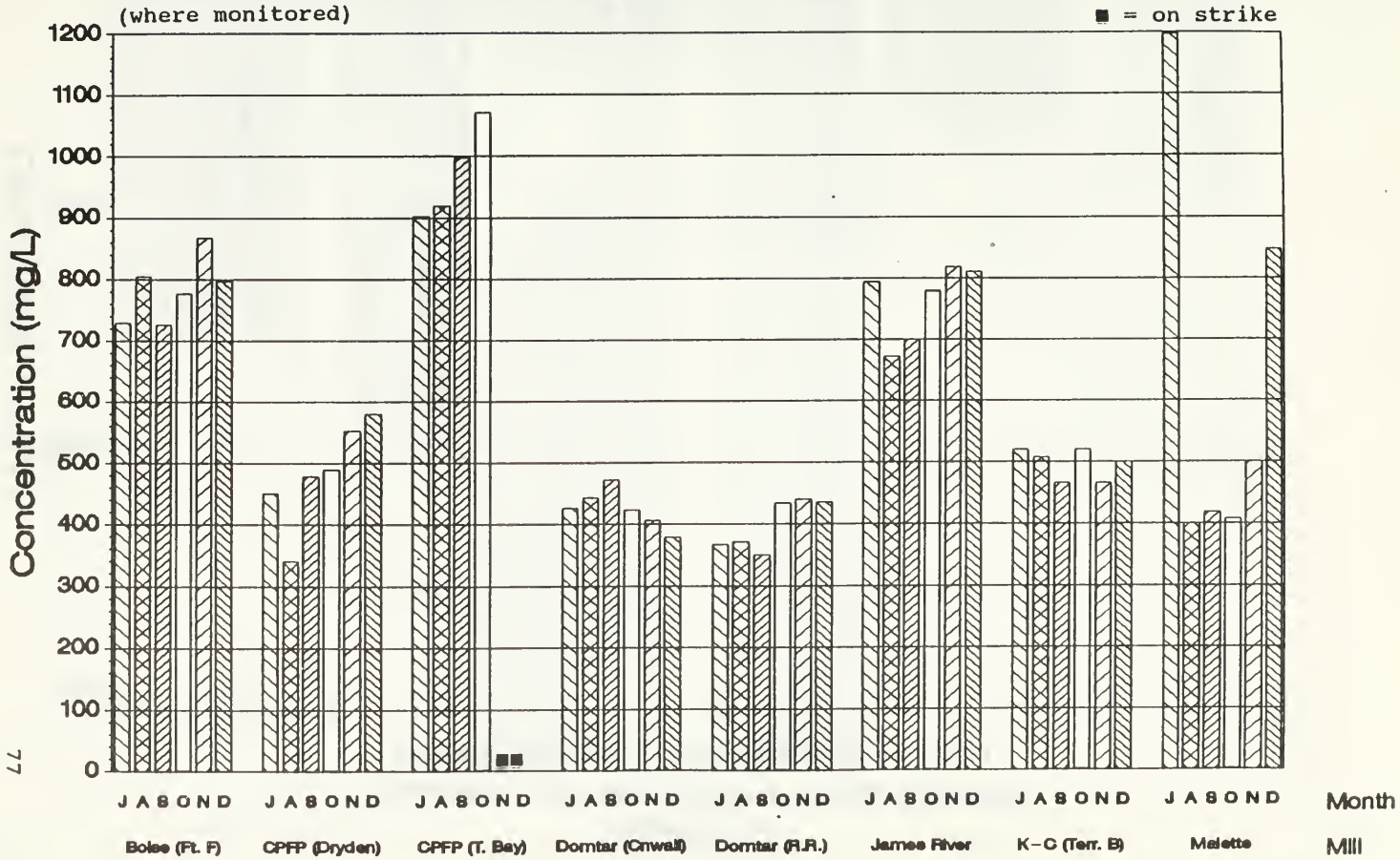


Figure 1.22
Sulphite – Mechanical Mill Process Effluent
Monthly Average Concentration of COD

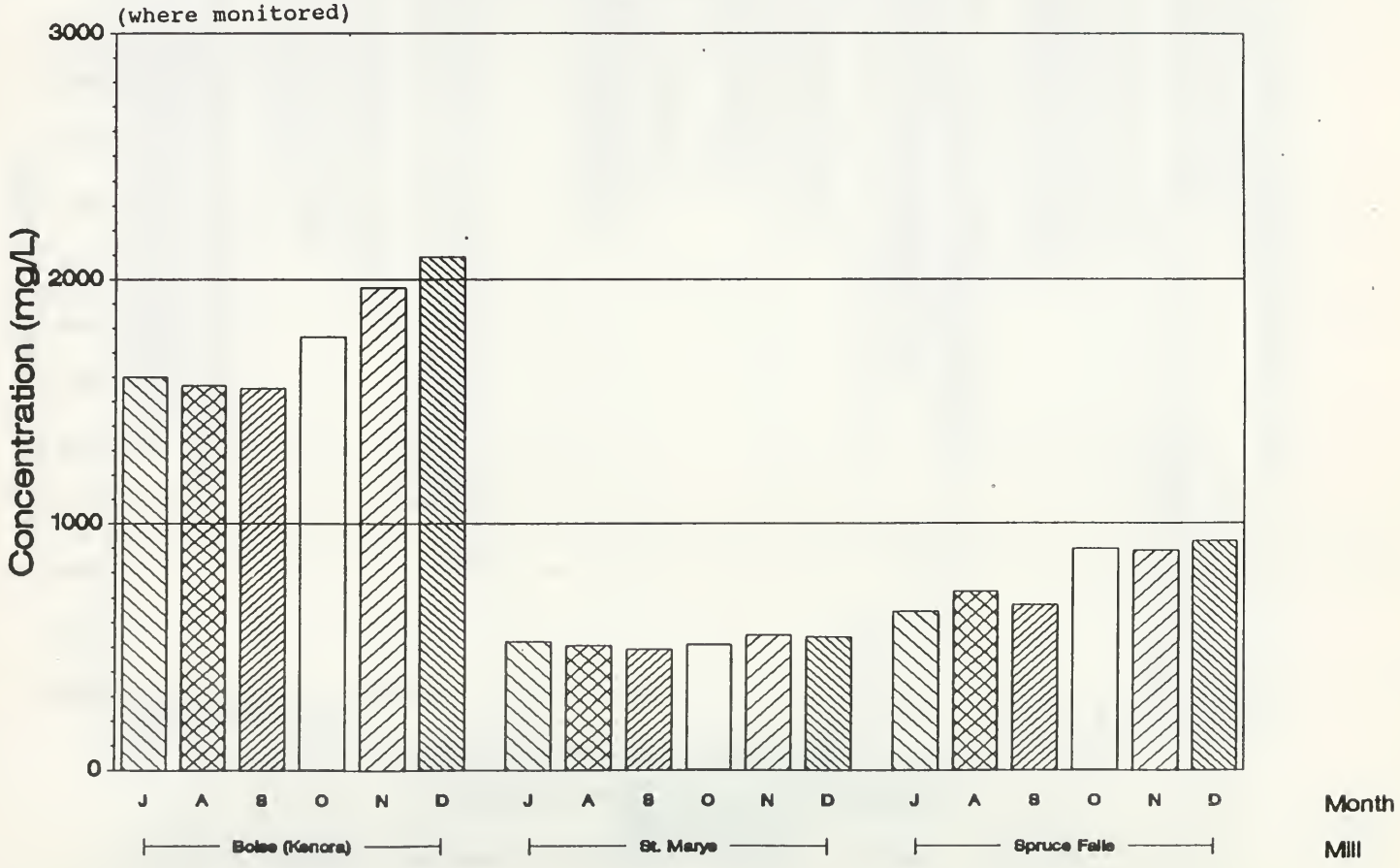
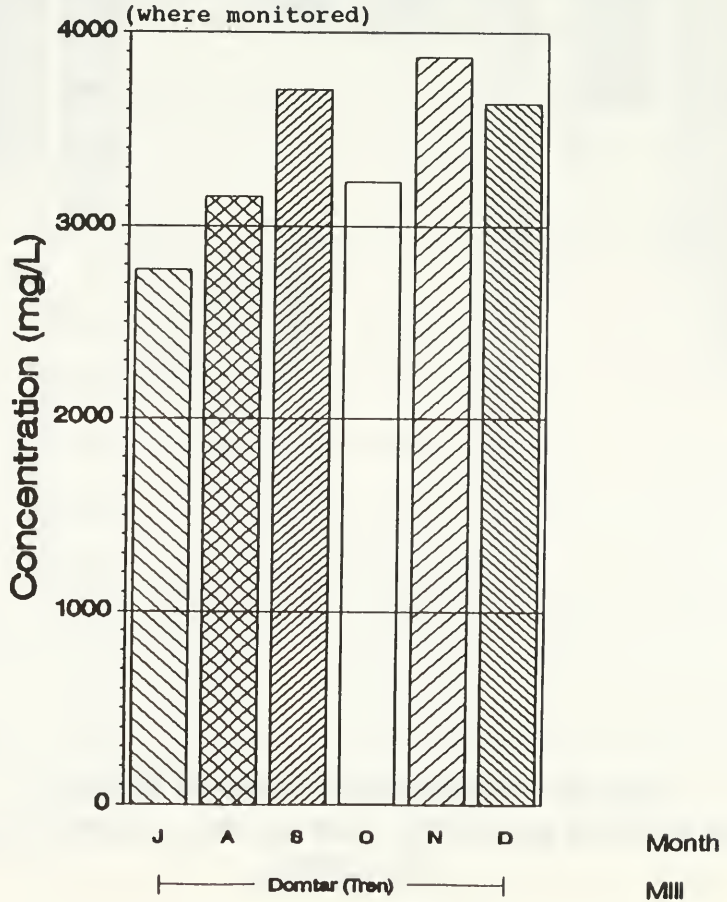
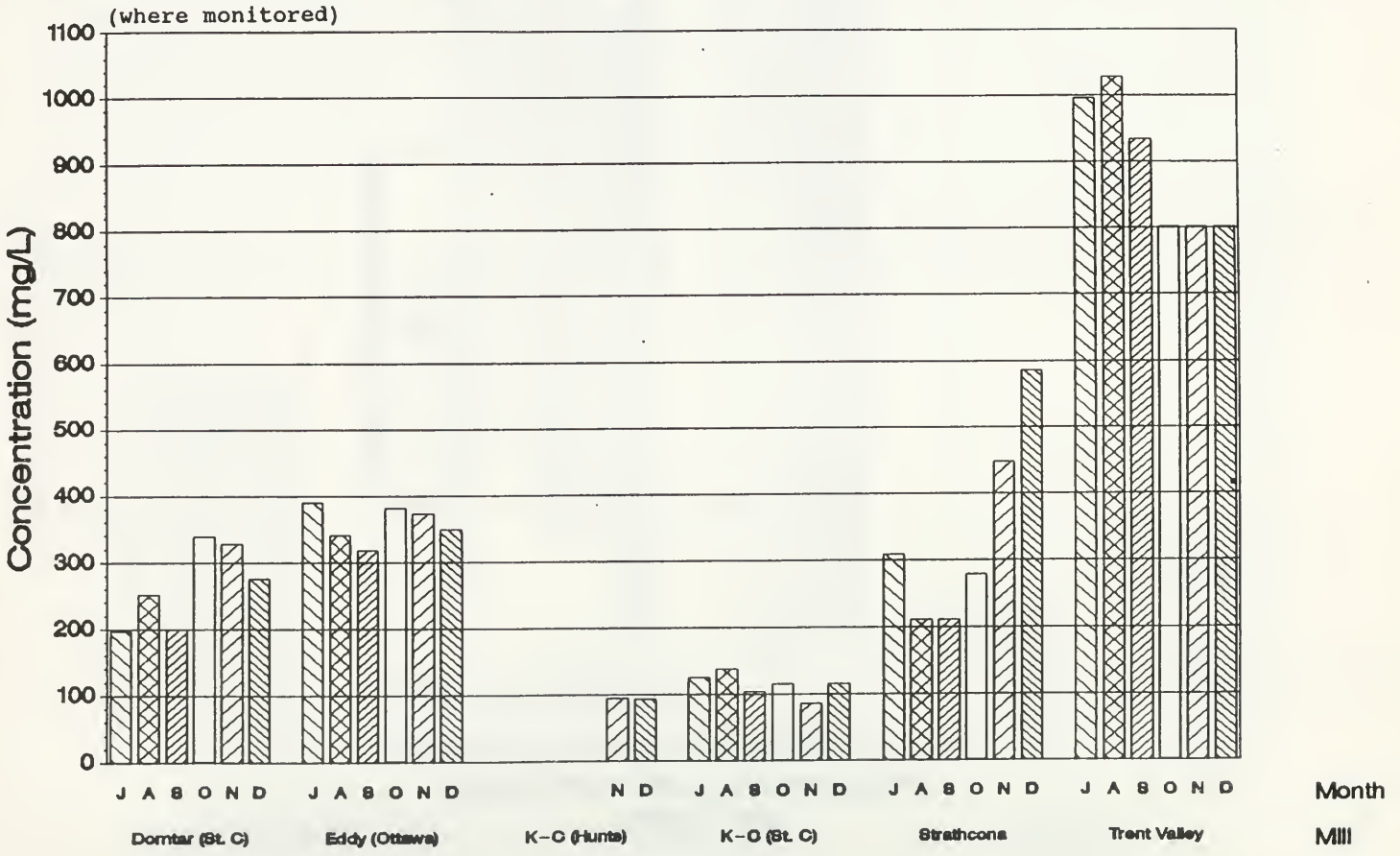


Figure 1.23
Corrugating Mill Process Effluent
Monthly Average Concentration of COD



## Figure 1.24
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Concentration of COD



## Figure 1.25
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of DOC

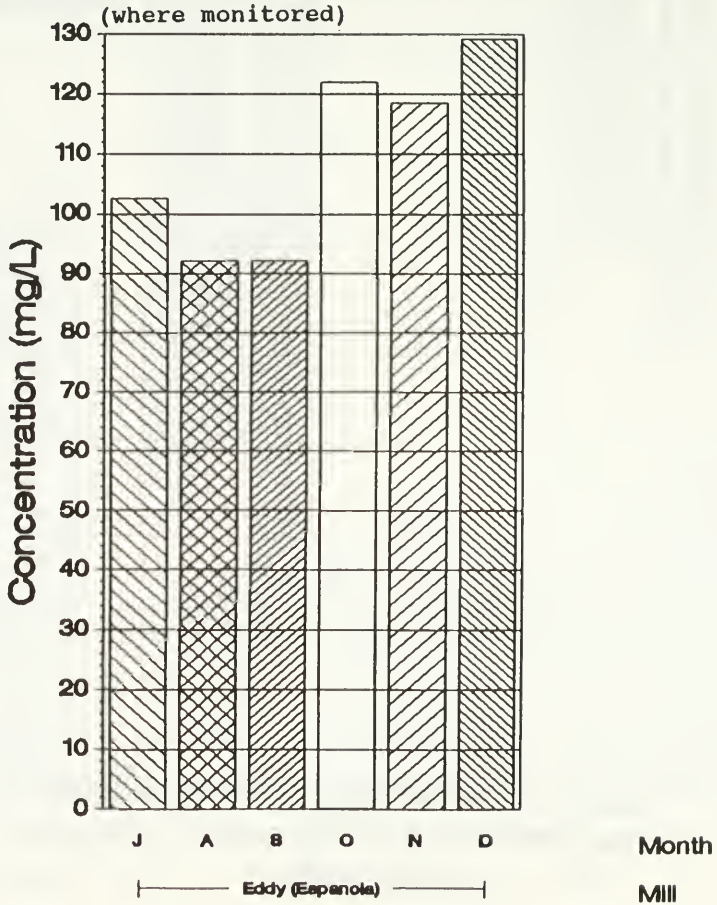
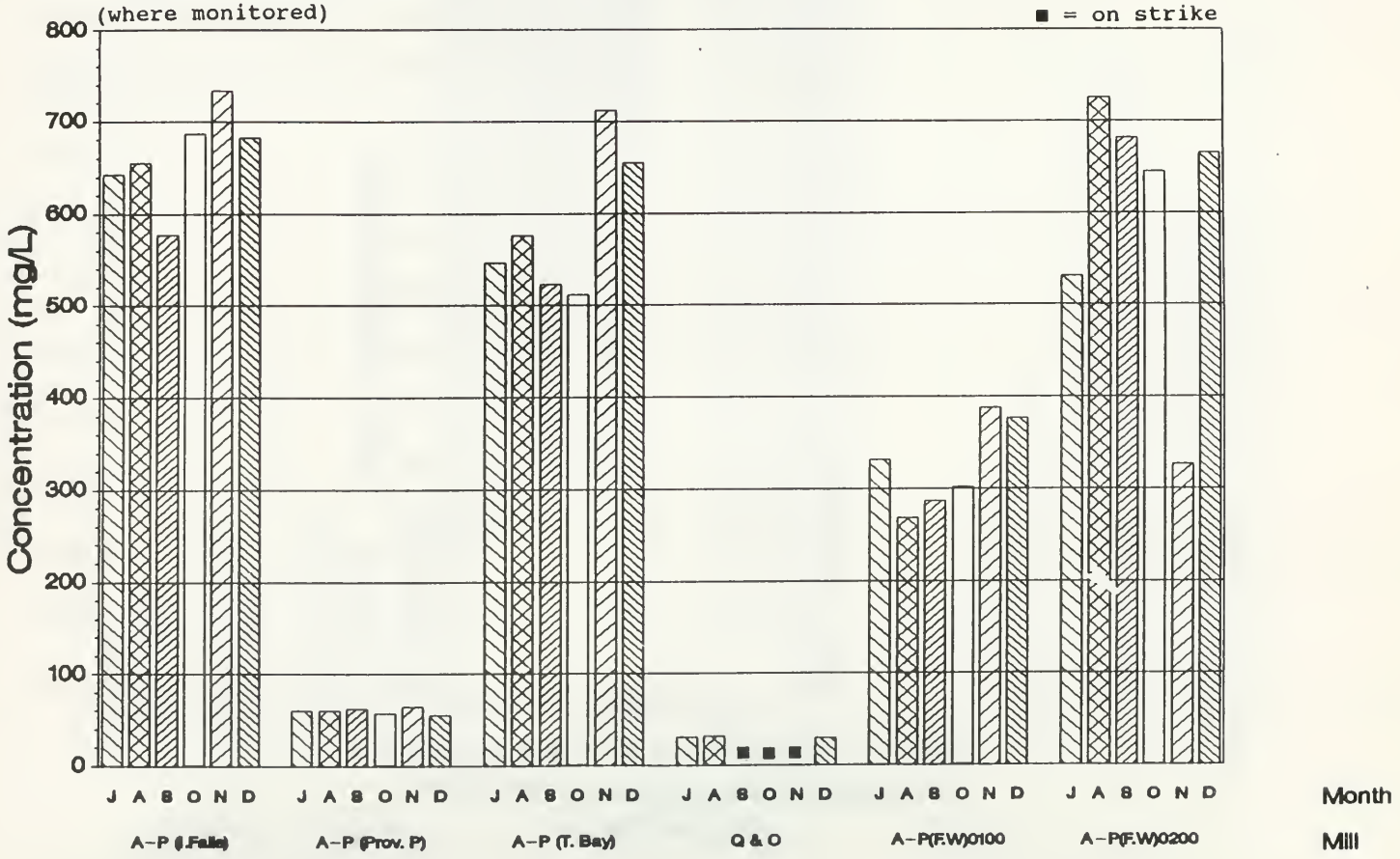


Figure 1.26
Sulphite – Mechanical Mill Process Effluent
Monthly Average Concentration of DOC



## Figure 1.27
## Corrugating Mill Process Effluent
## Monthly Average Concentration of DOC

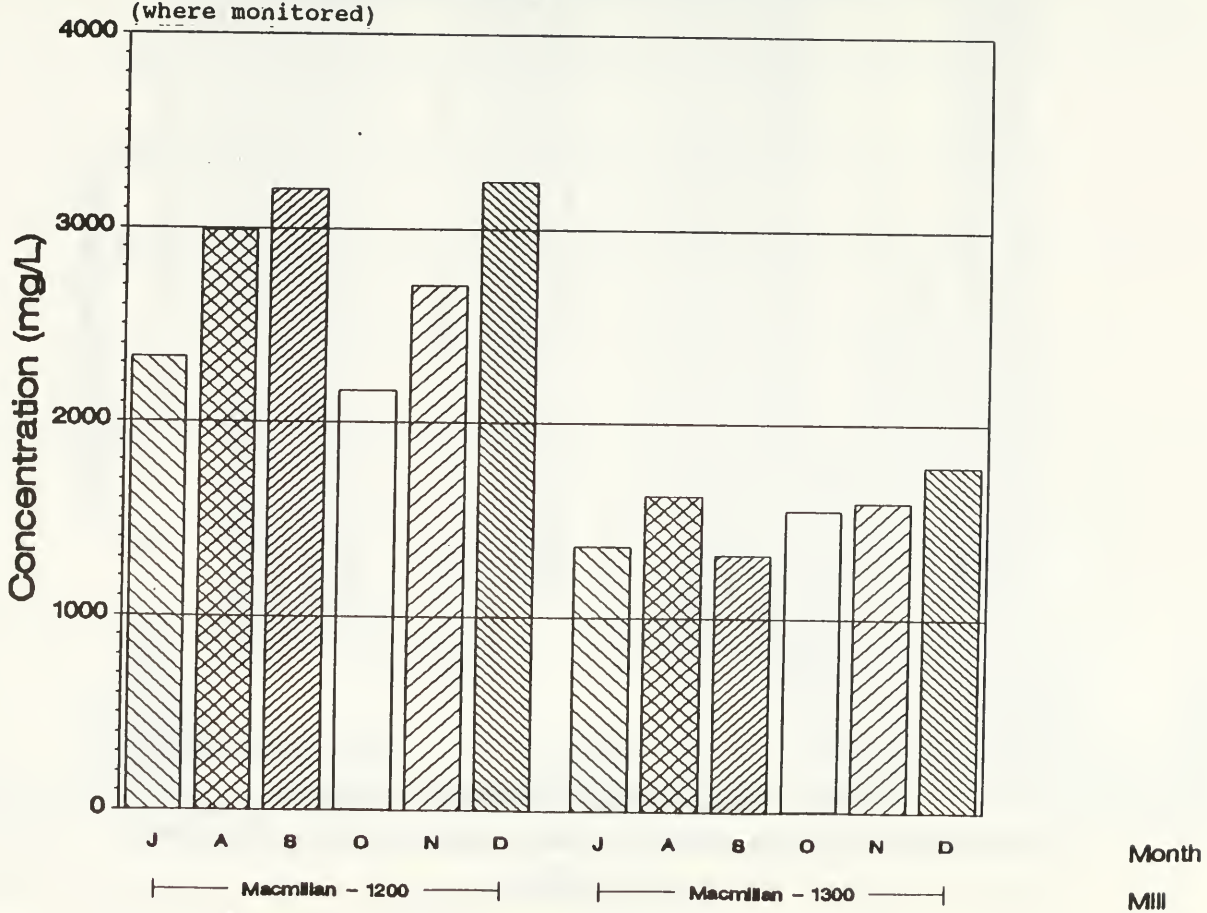


Figure 1.28
Deinking – Board – Fine Papers – Tissue Mill Process Effluent
Monthly Average Concentration of DOC

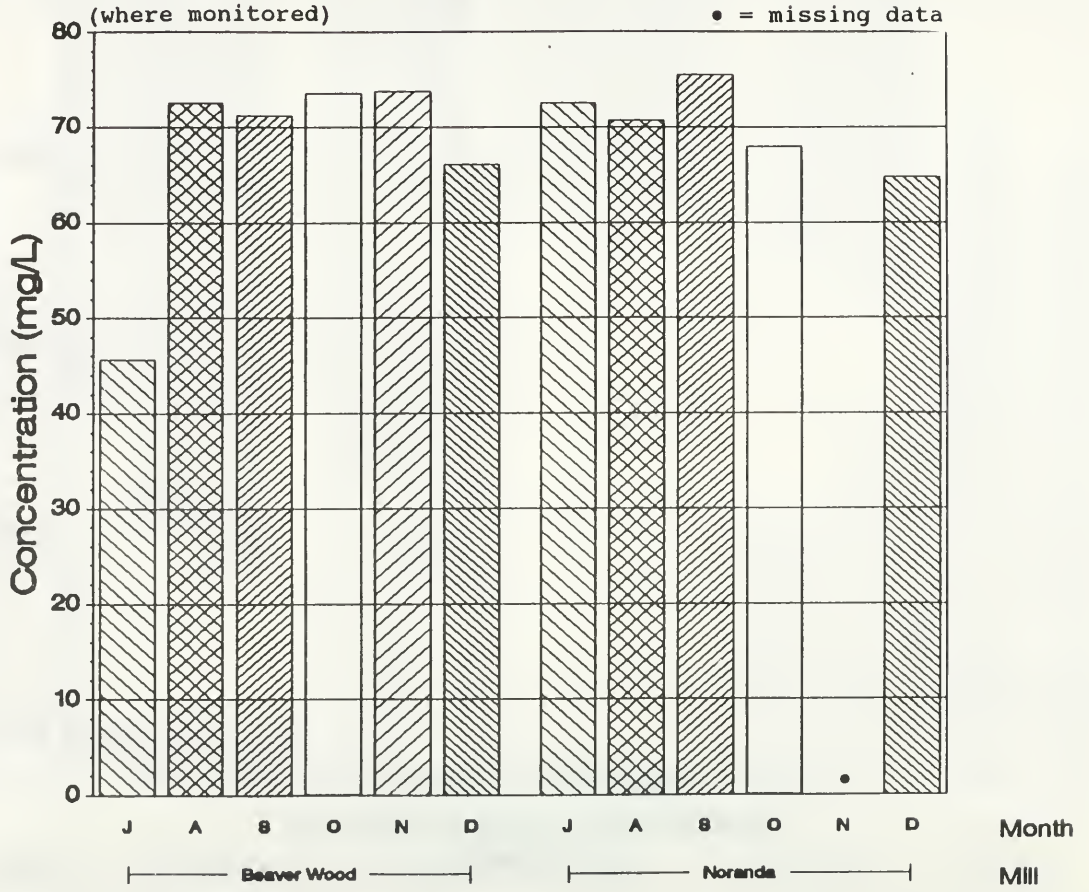


Figure 1.29
Sulphate (Kraft) Mill Process Effluent
Monthly Average Concentration of Ammonia plus Ammonium

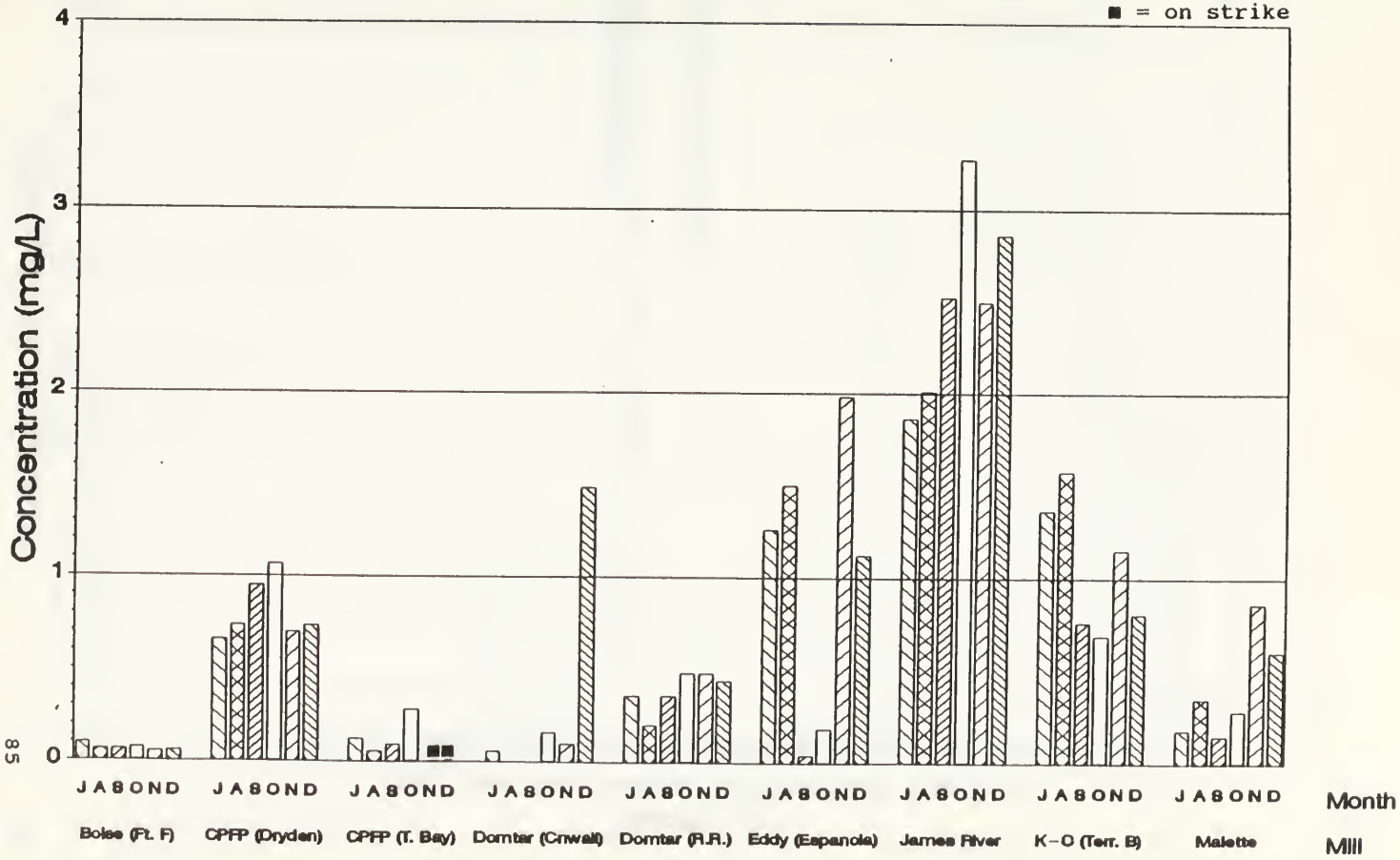


Figure 1.30

Sulphite – Mechanical Mill Process Effluent

Monthly Average Concentration of Ammonia plus Ammonium

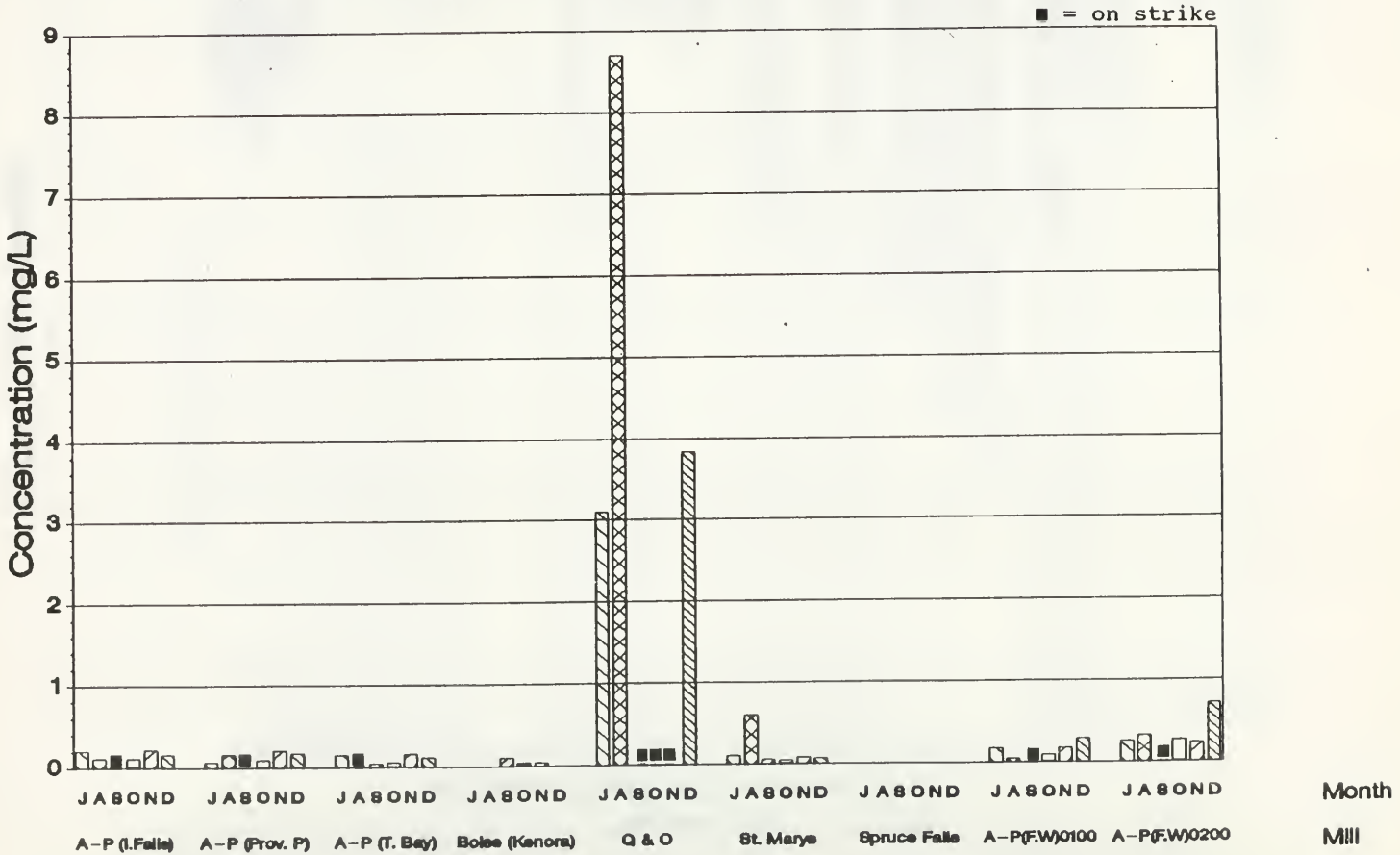


Figure 1.31
Corrugating Mill Process Effluent
Monthly Average Concentration of Ammonia plus Ammonium

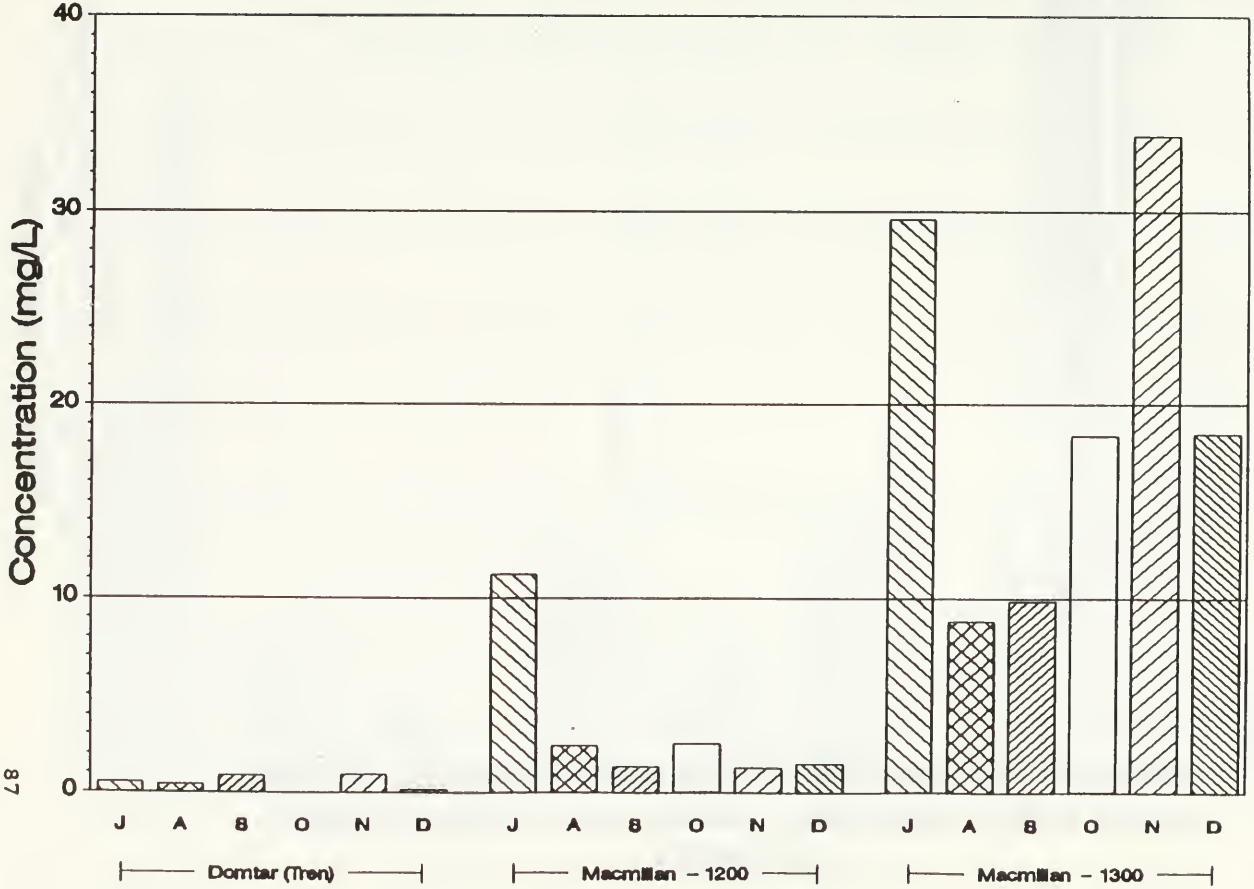
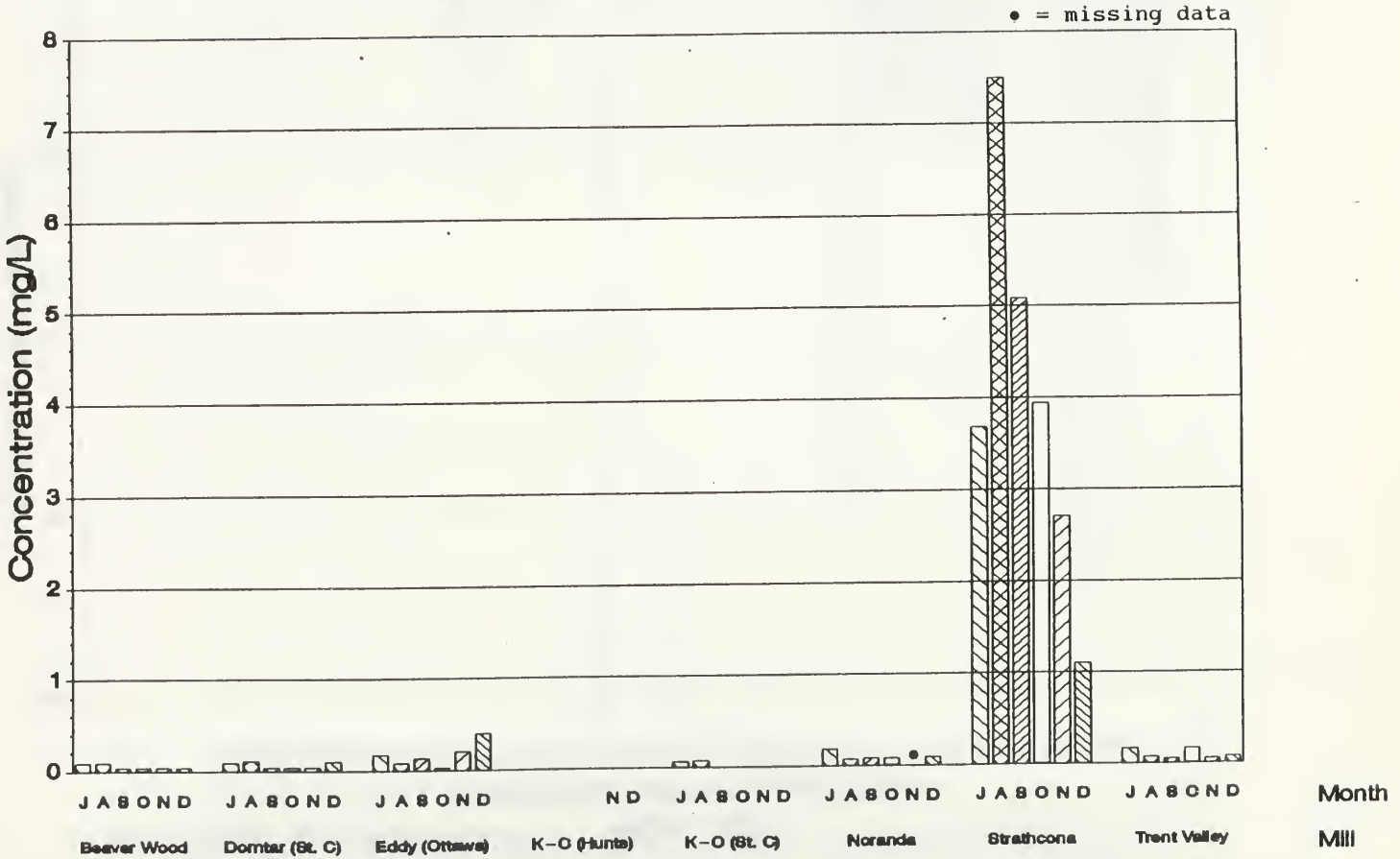


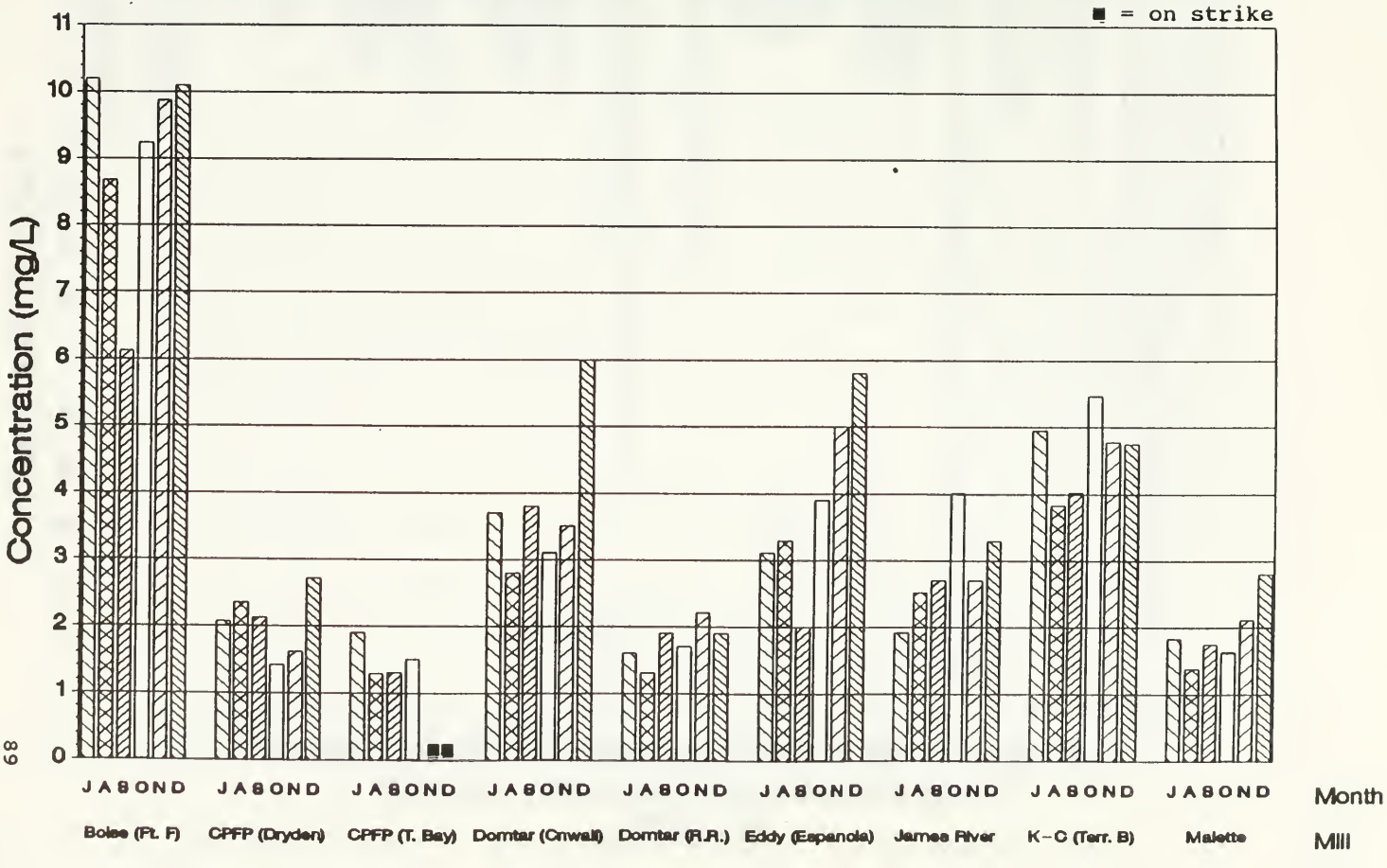
Figure 1.32

Deinking – Board – Fine Papers – Tissue Mill Process Effluent

Monthly Average Concentration of Ammonia plus Ammonium



## Figure 1.33
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of Total Kjeldahl Nitrogen



# Figure 1.34
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Concentration of Total Kjeldahl Nitrogen

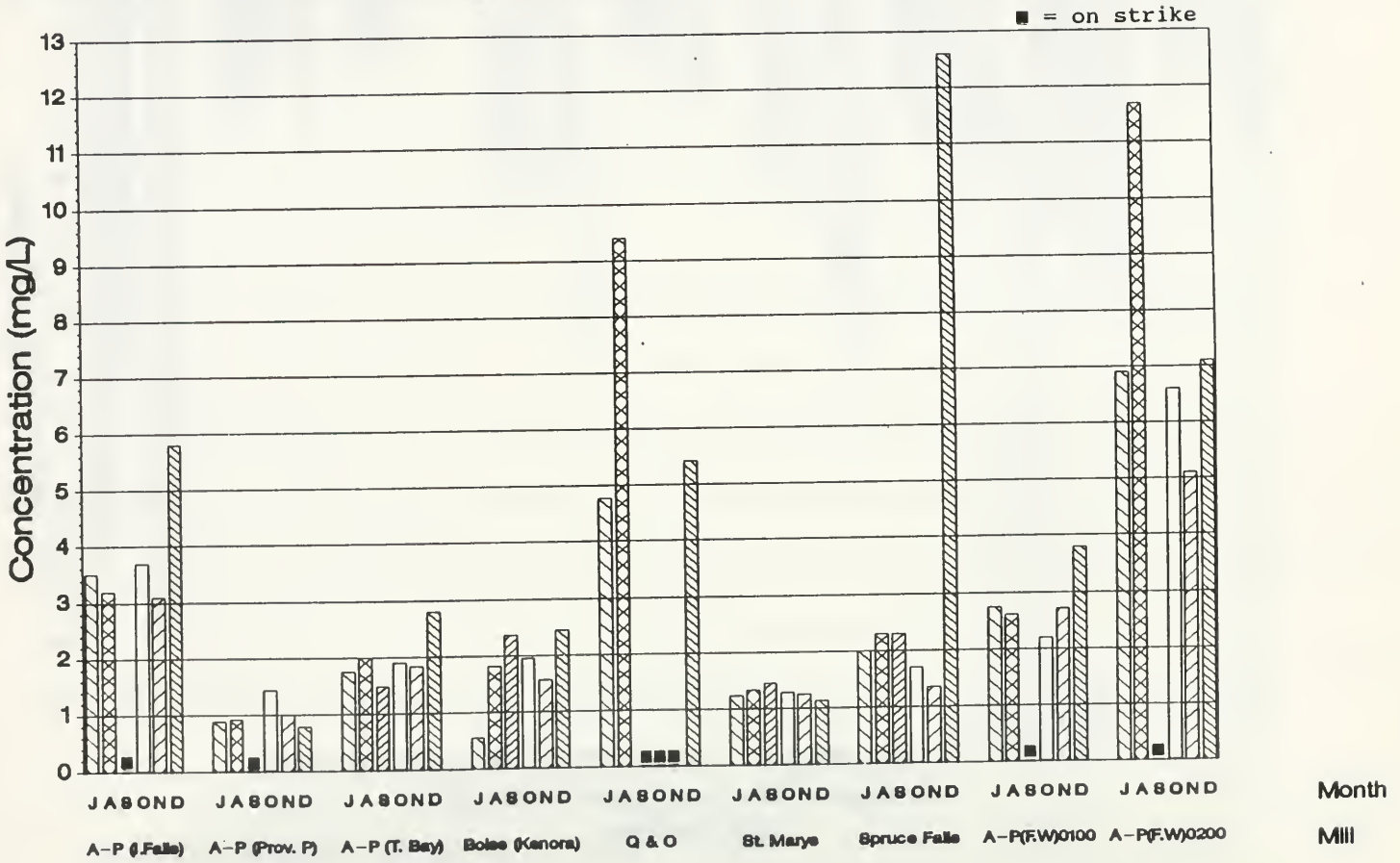
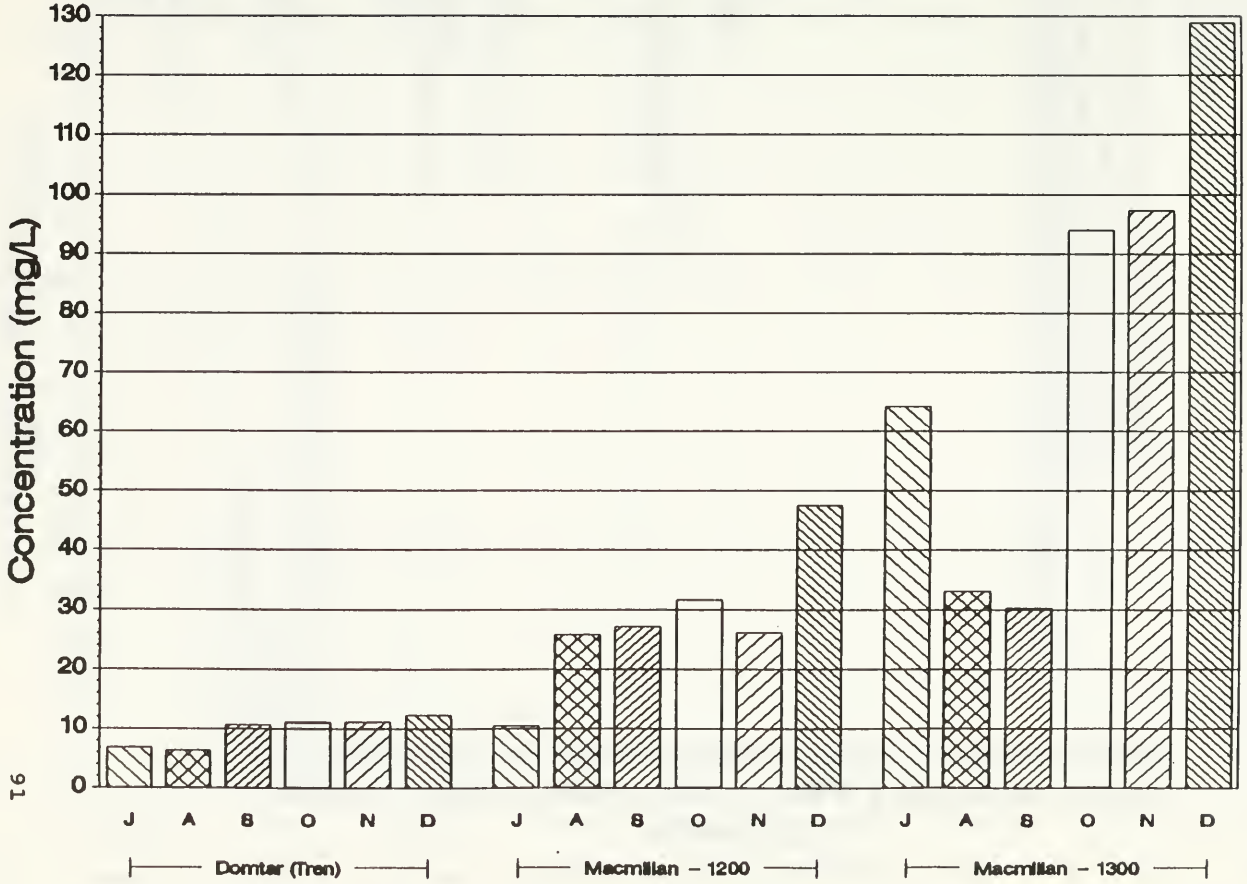
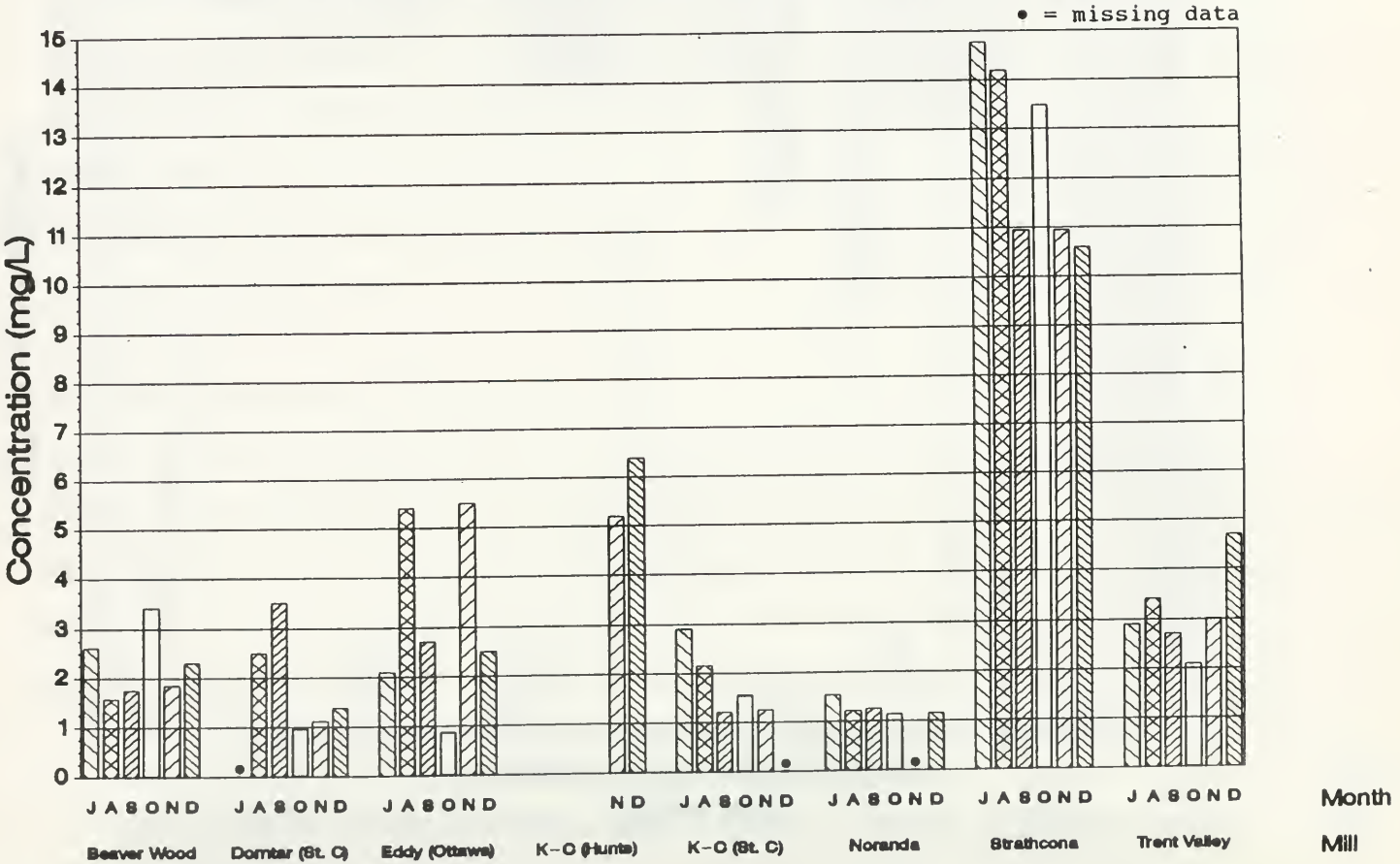


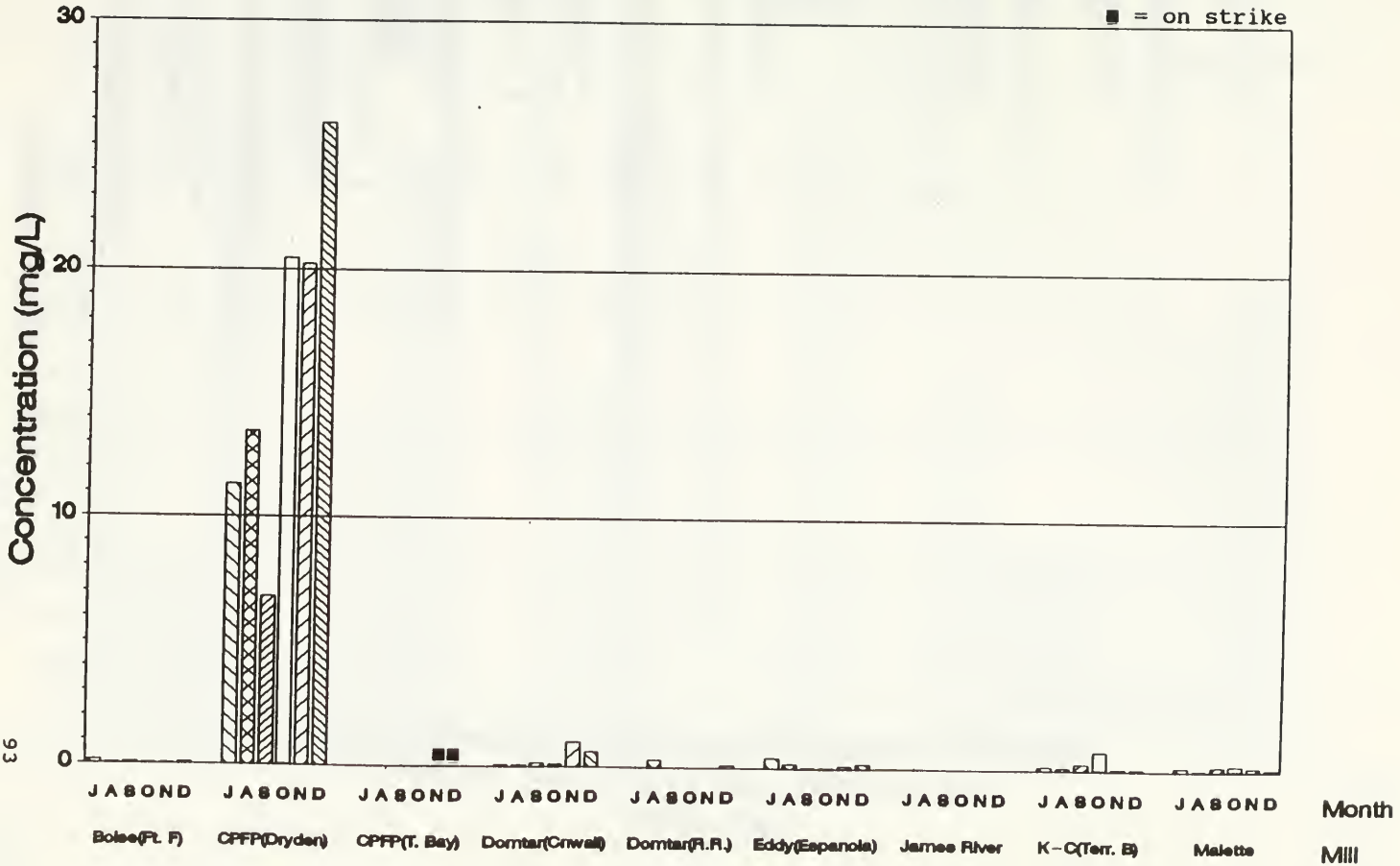
Figure 1.35
Corrugating Mill Process Effluent
Monthly Average Concentration of Total Kjeldahl Nitrogen



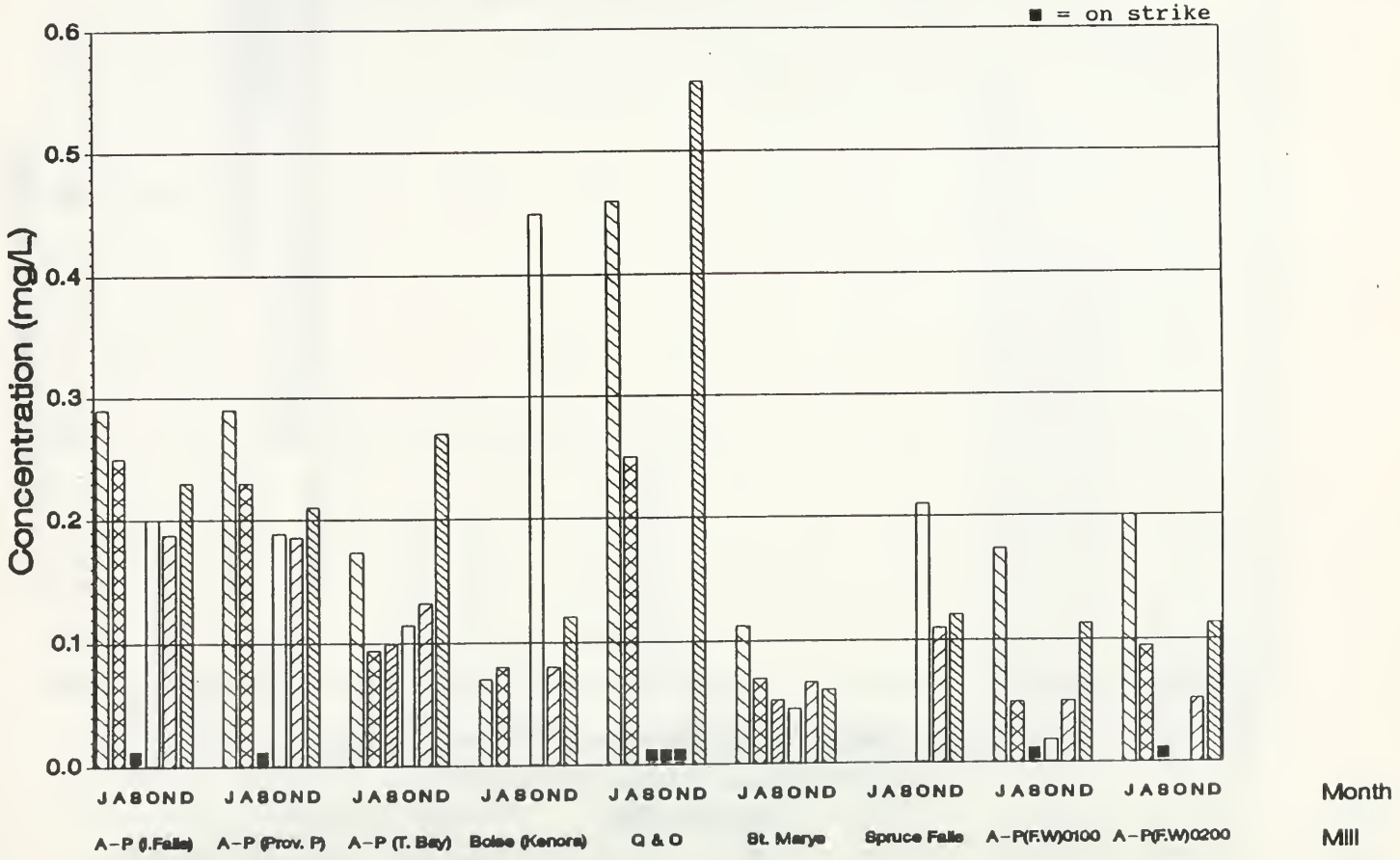
# Figure 1.36
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Concentration of Total Kjeldahl Nitrogen



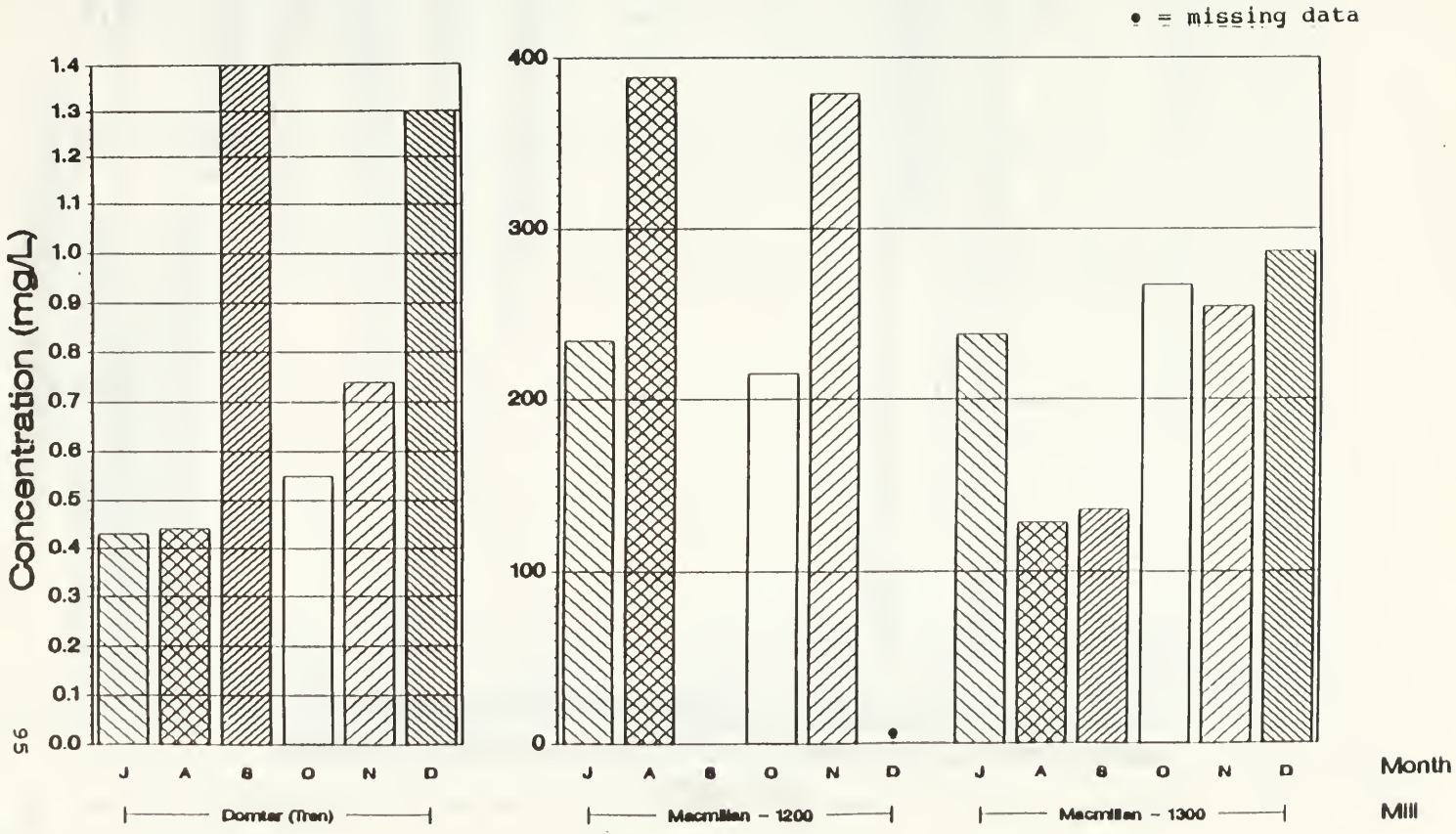
# Figure 1.37
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Concentration of Nitrate and Nitrite



# Figure 1.38
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Concentration of Nitrate and Nitrite



## Figure 1.39
## Corrugating Mill Process Effluent
## Monthly Average Concentration of Nitrate and Nitrite



## Figure 1.40
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Concentration of Nitrate and Nitrite

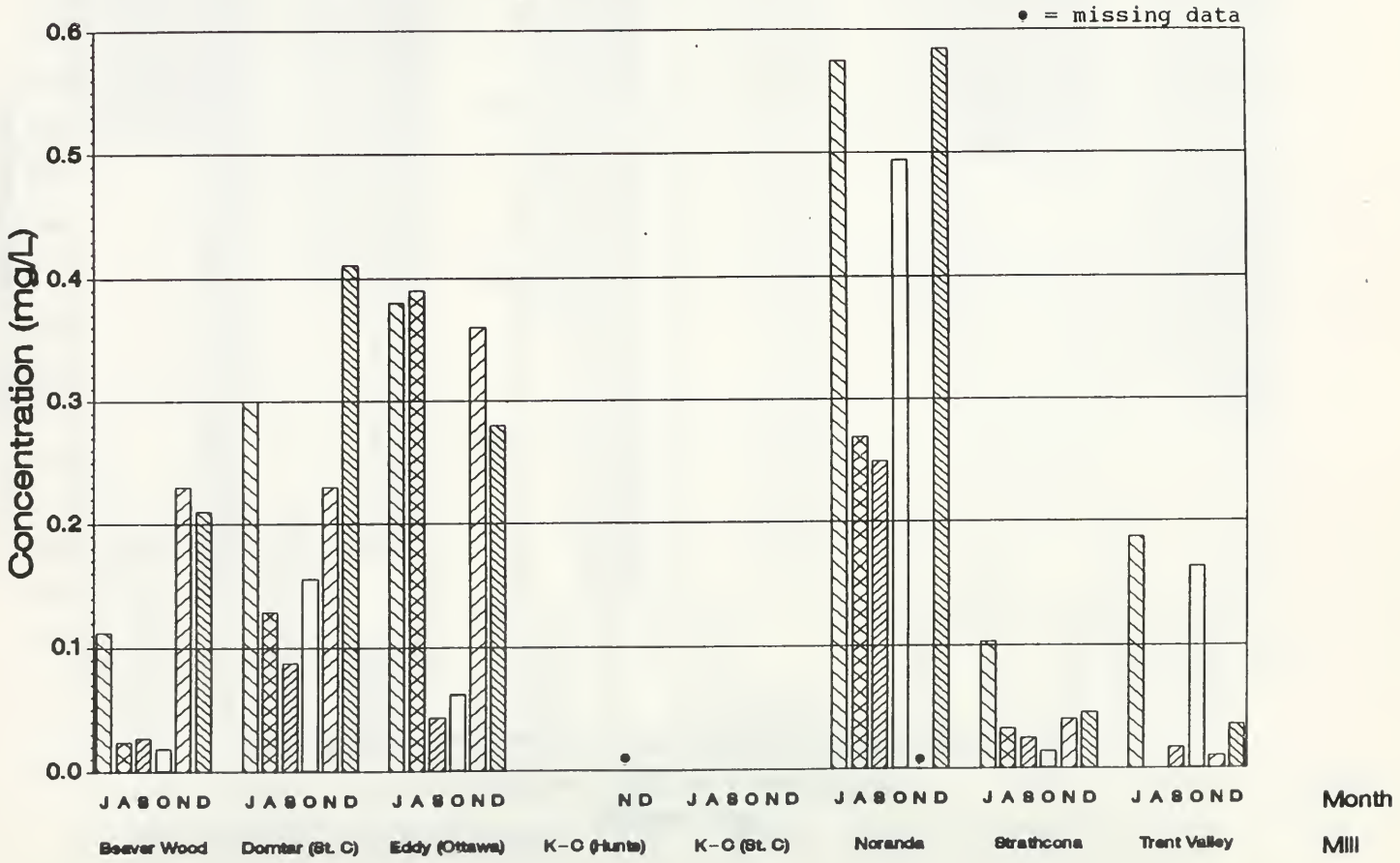
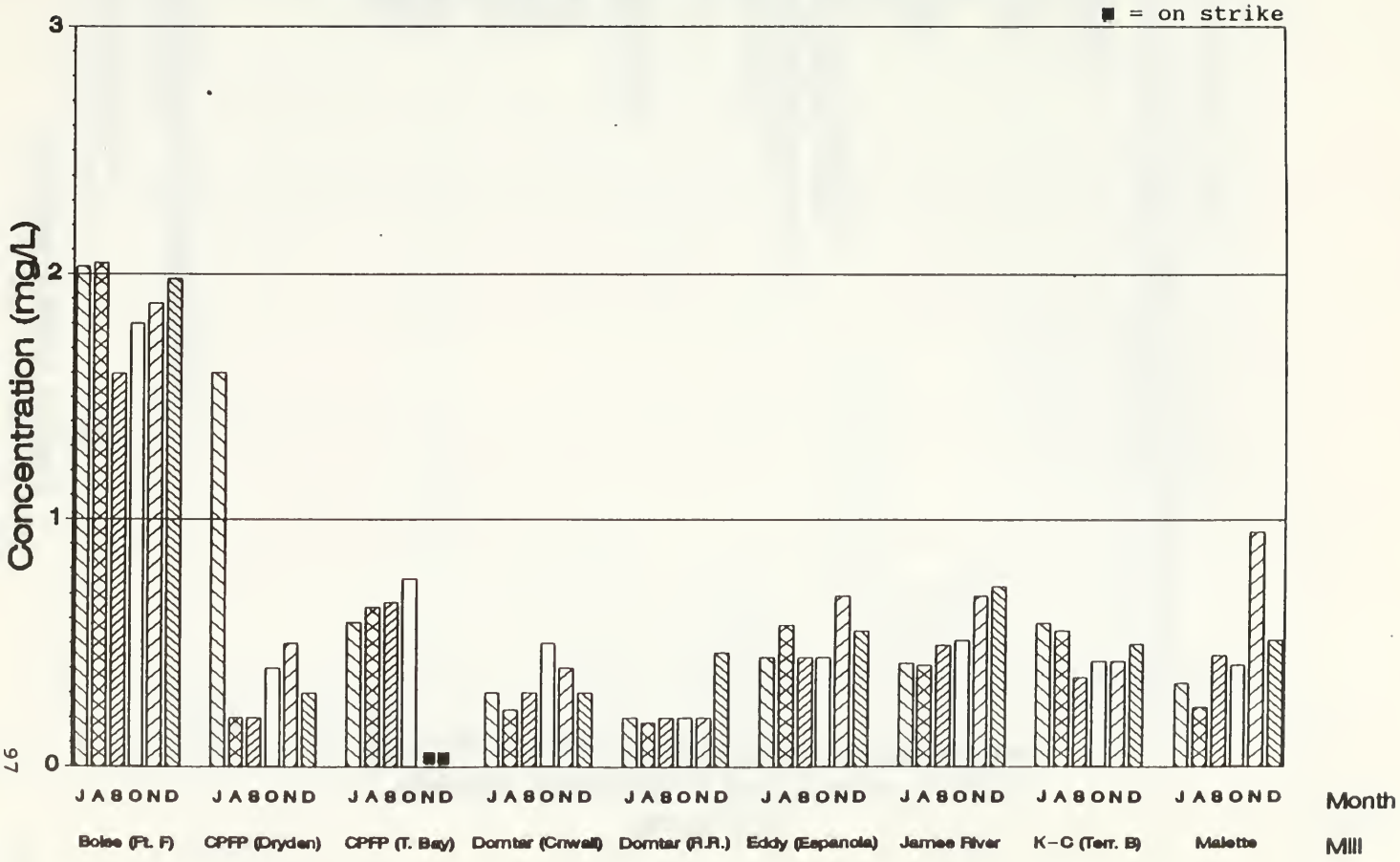
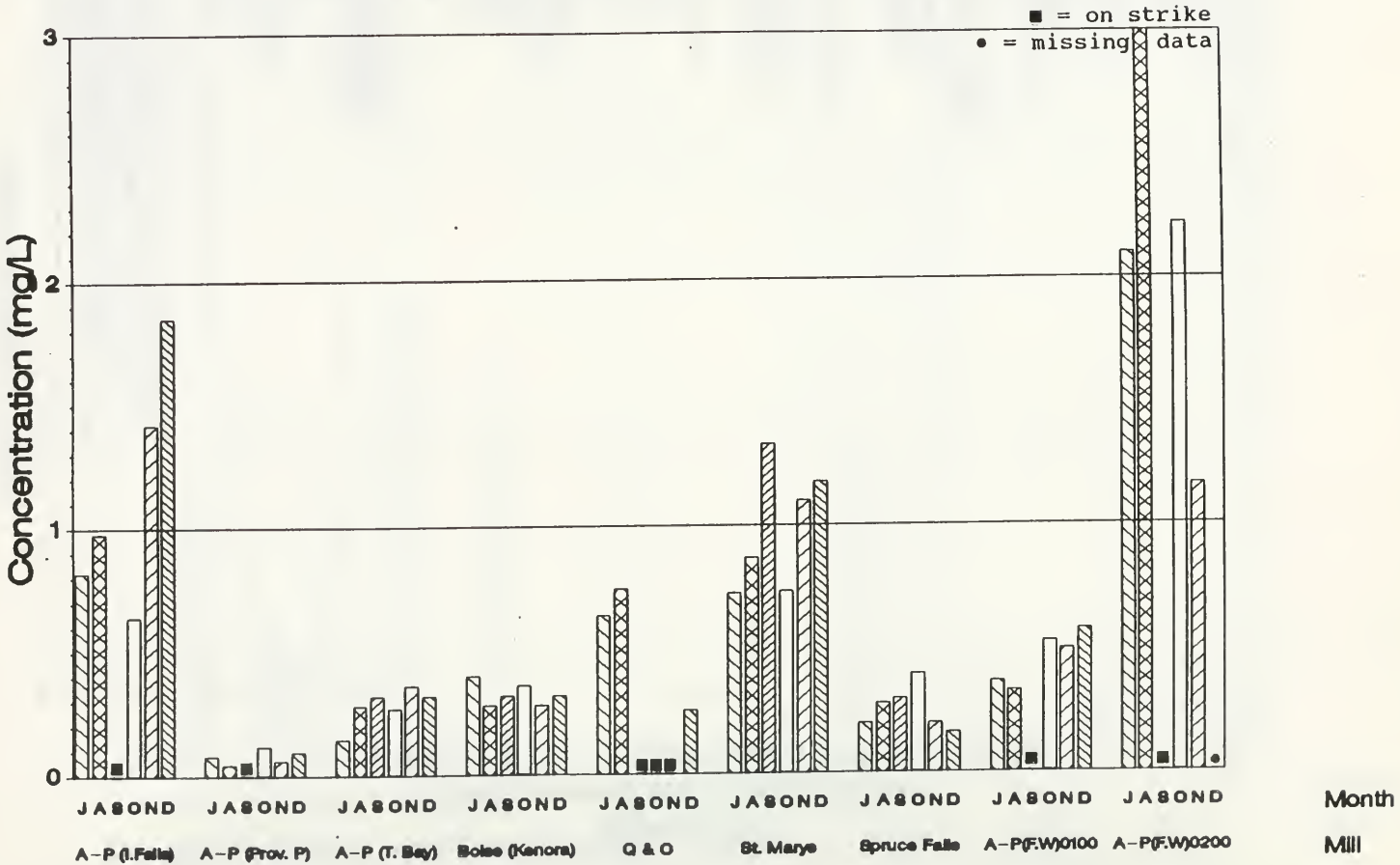


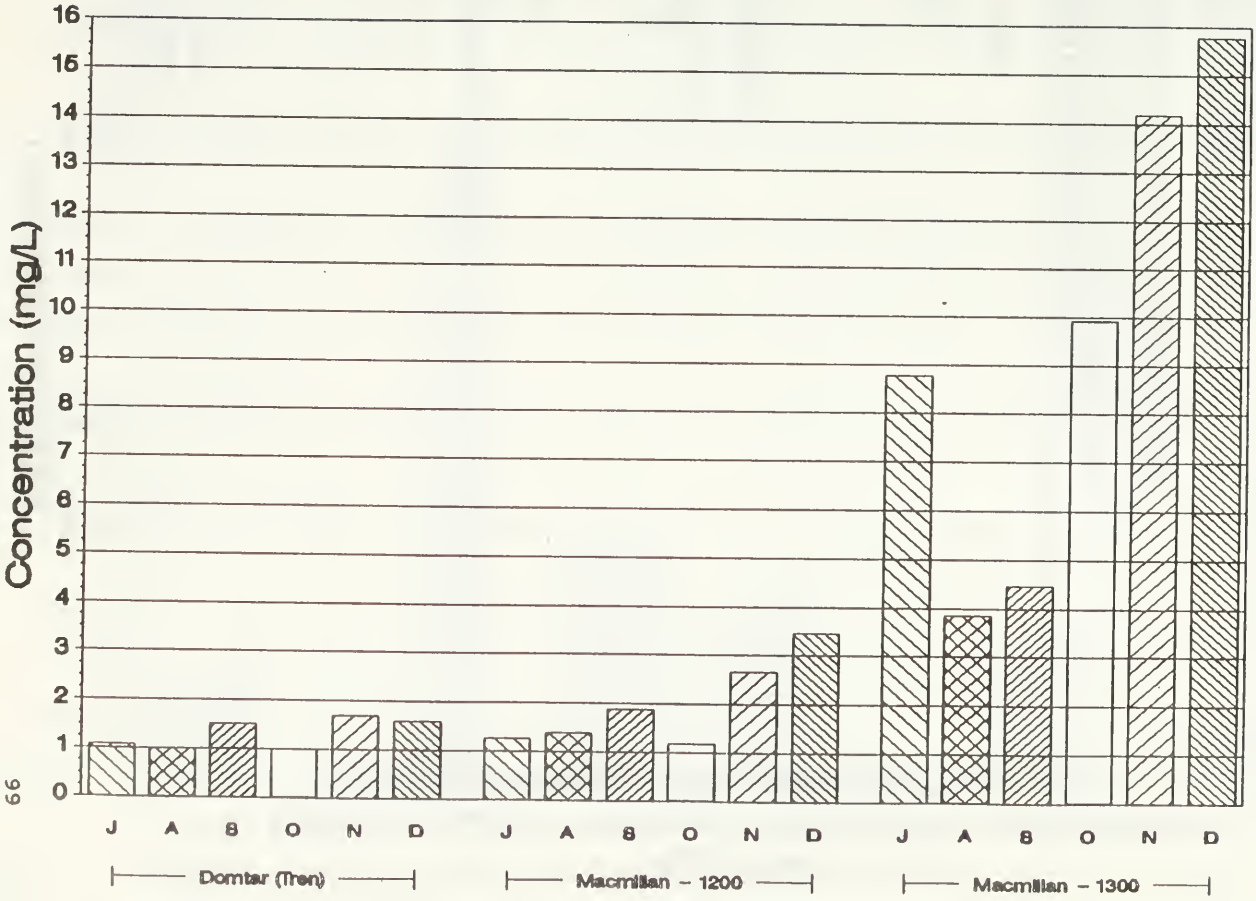
Figure 1.41
Sulphate (Kraft) Mill Process Effluent
Monthly Average Concentration of Phosphorus



# Figure 1.42
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Concentration of Phosphorus



## Figure 1.43
## Corrugating Mill Process Effluent
## Monthly Average Concentration of Phosphorus



## Figure 1.44
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Concentration of Phosphorus

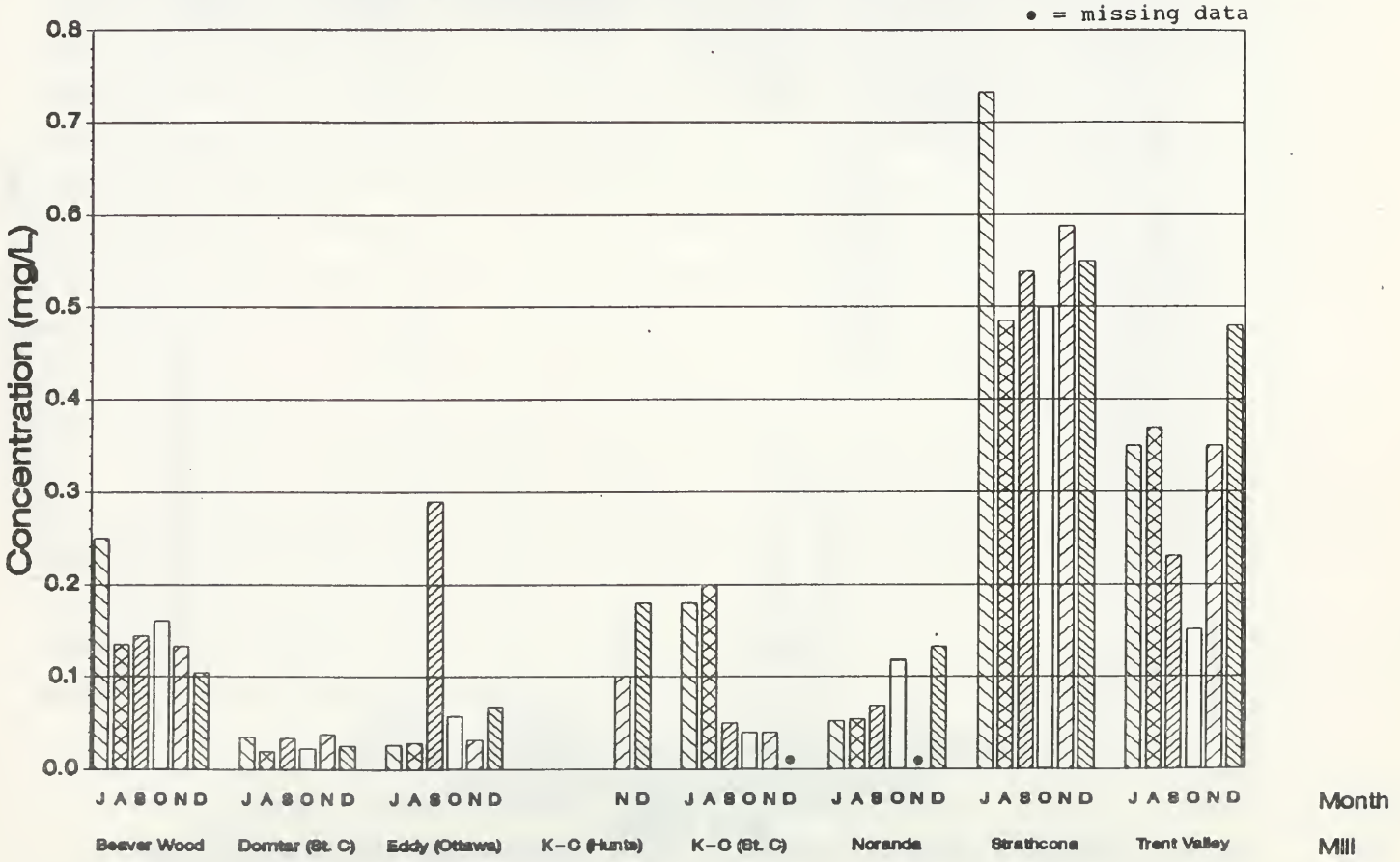


Figure 2.1
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of 5–Day Biological Oxygen Demand

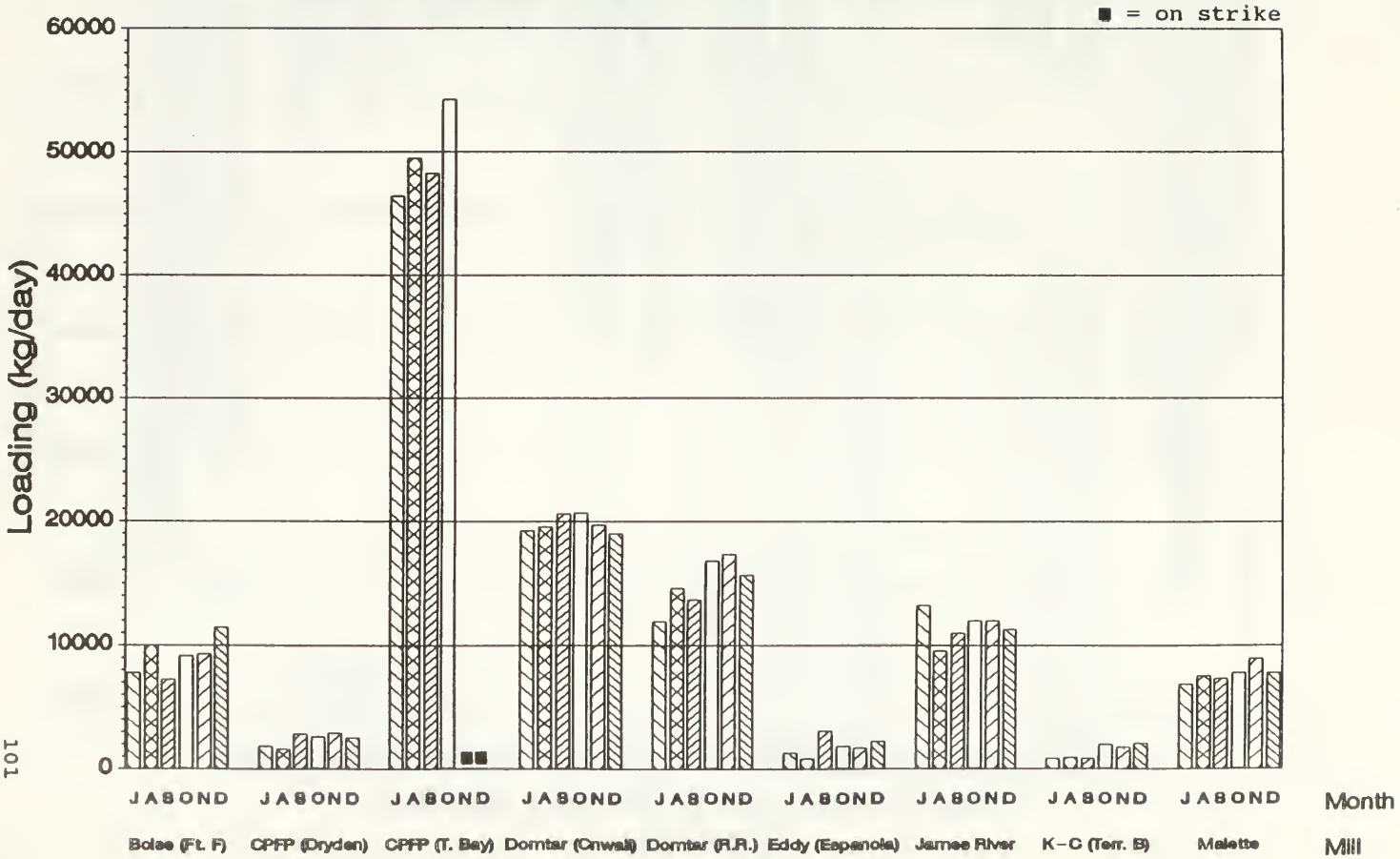


Figure 2.2

Sulphite – Mechanical Mill Process Effluent

Monthly Average Loading of 5 – Day Biological Oxygen Demand

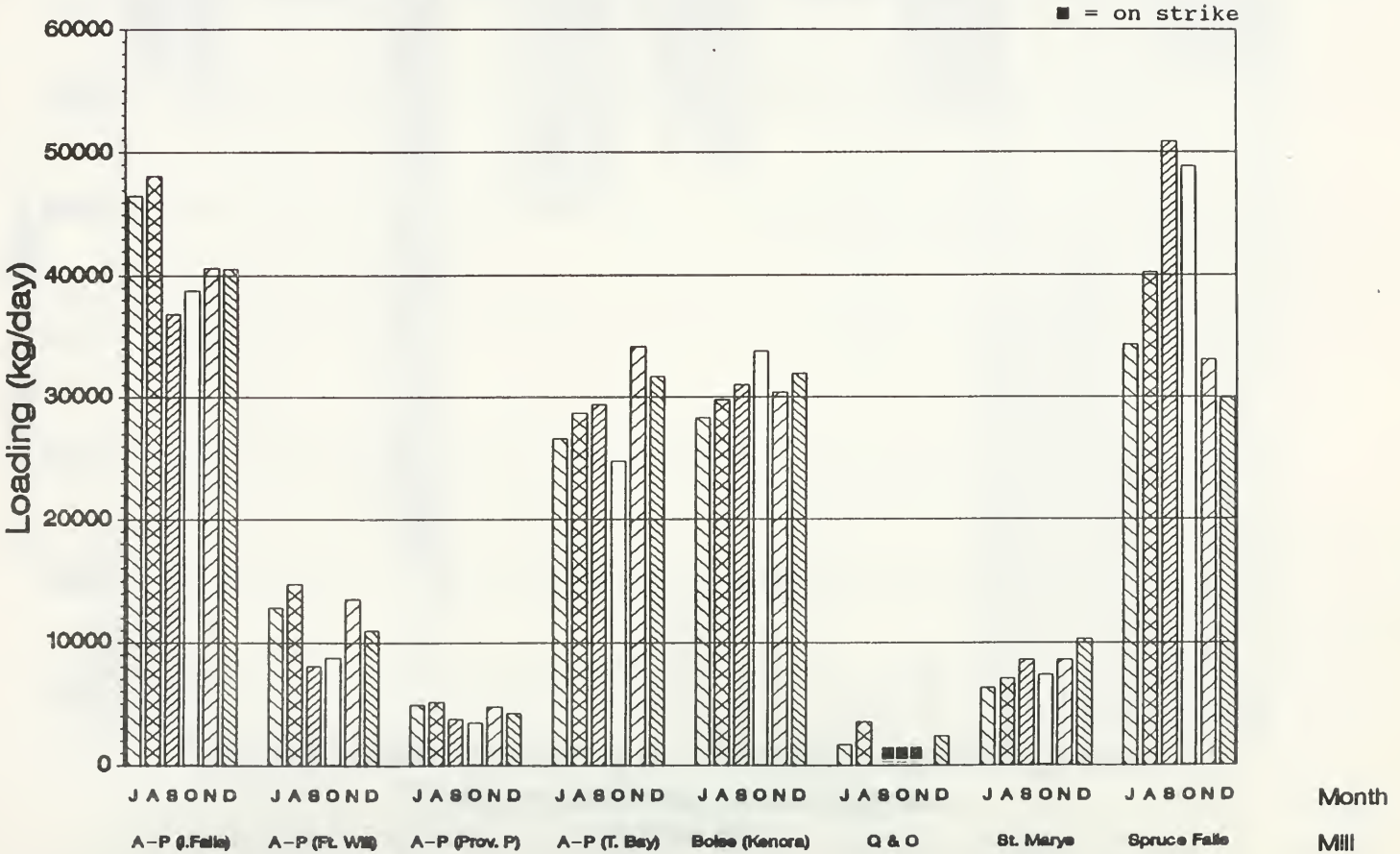
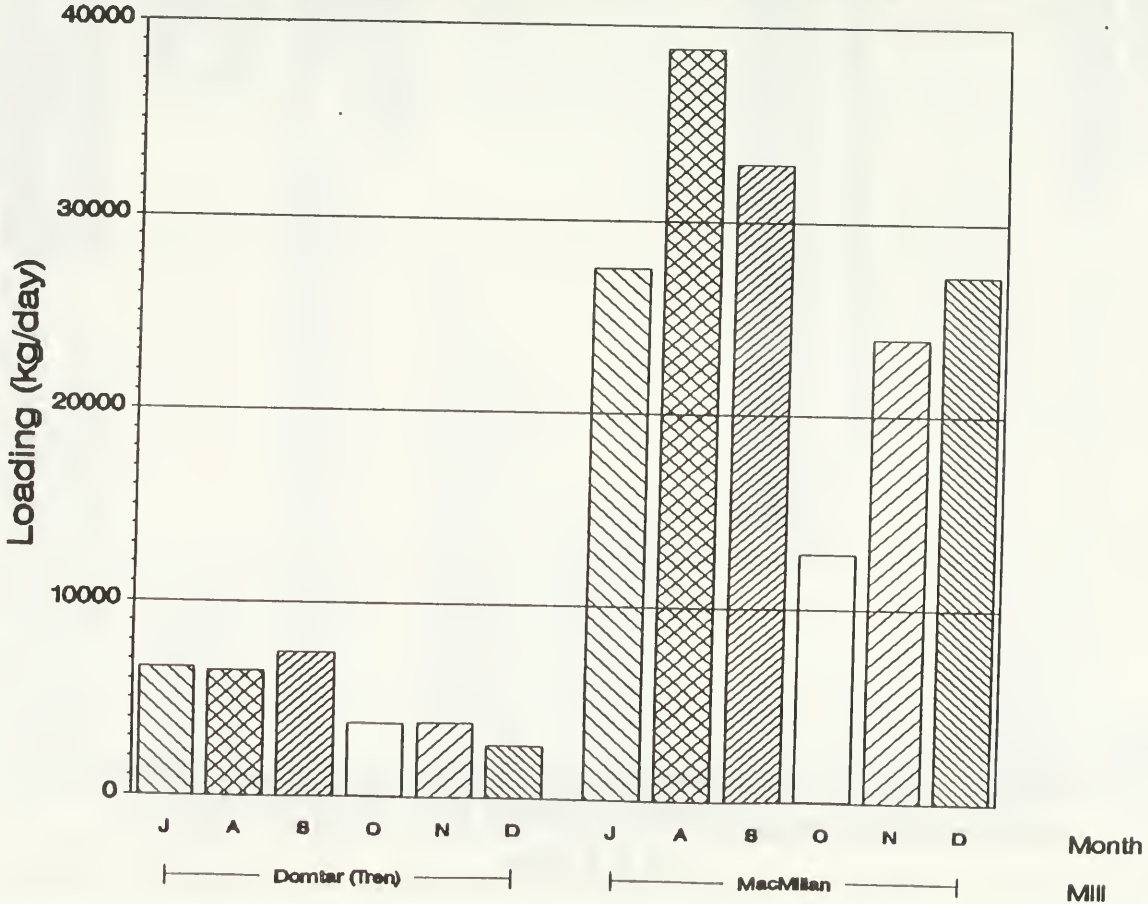


Figure 2.3
Corrugating Mill Process Effluent
Monthly Average Loading of 5-Day Biological Oxygen Demand



# Figure 2.4

## Deinking – Board – Fine Papers – Tissue Mill Process Effluent

## Monthly Average Loading of 5 – Day Biological Oxygen Demand

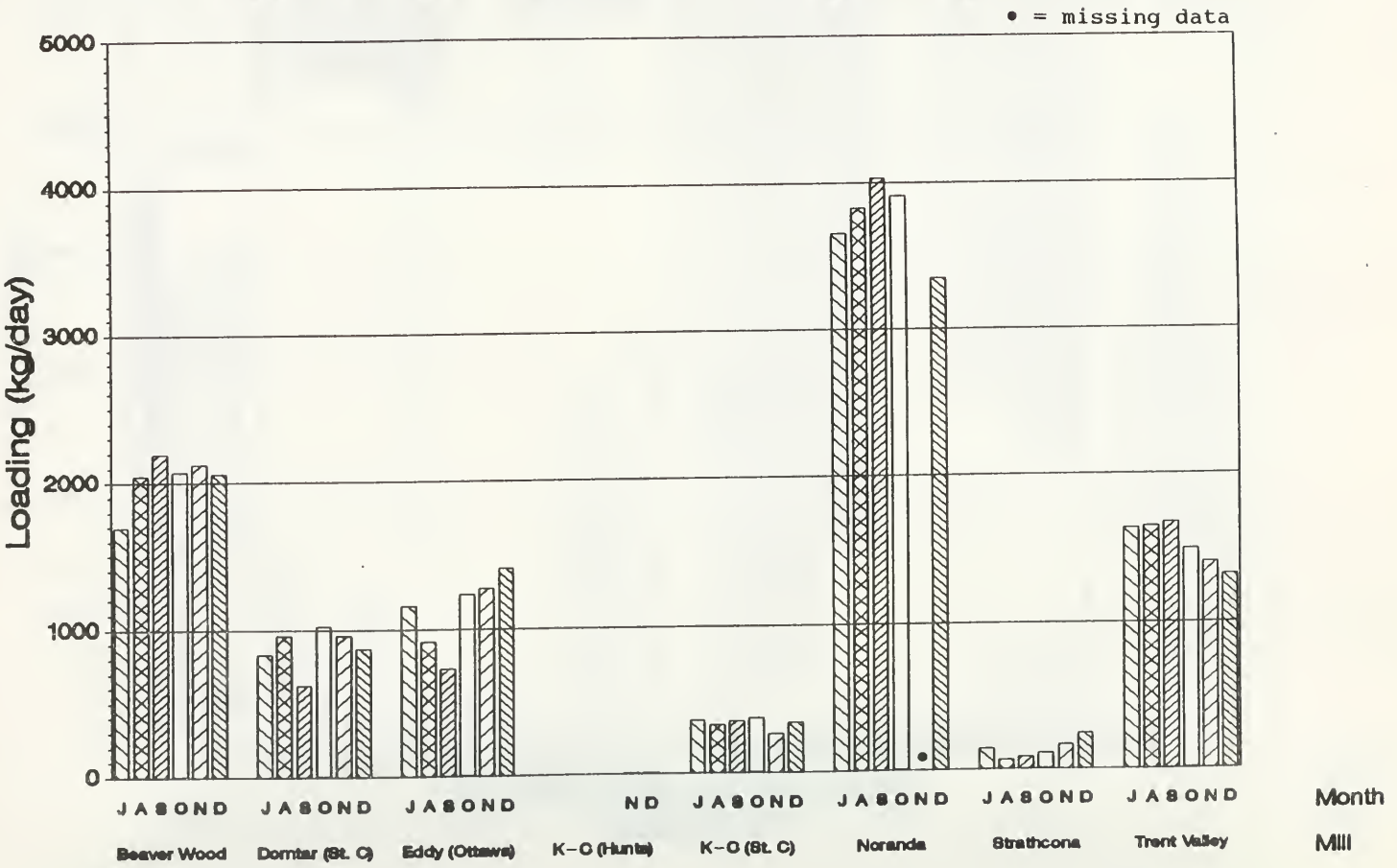
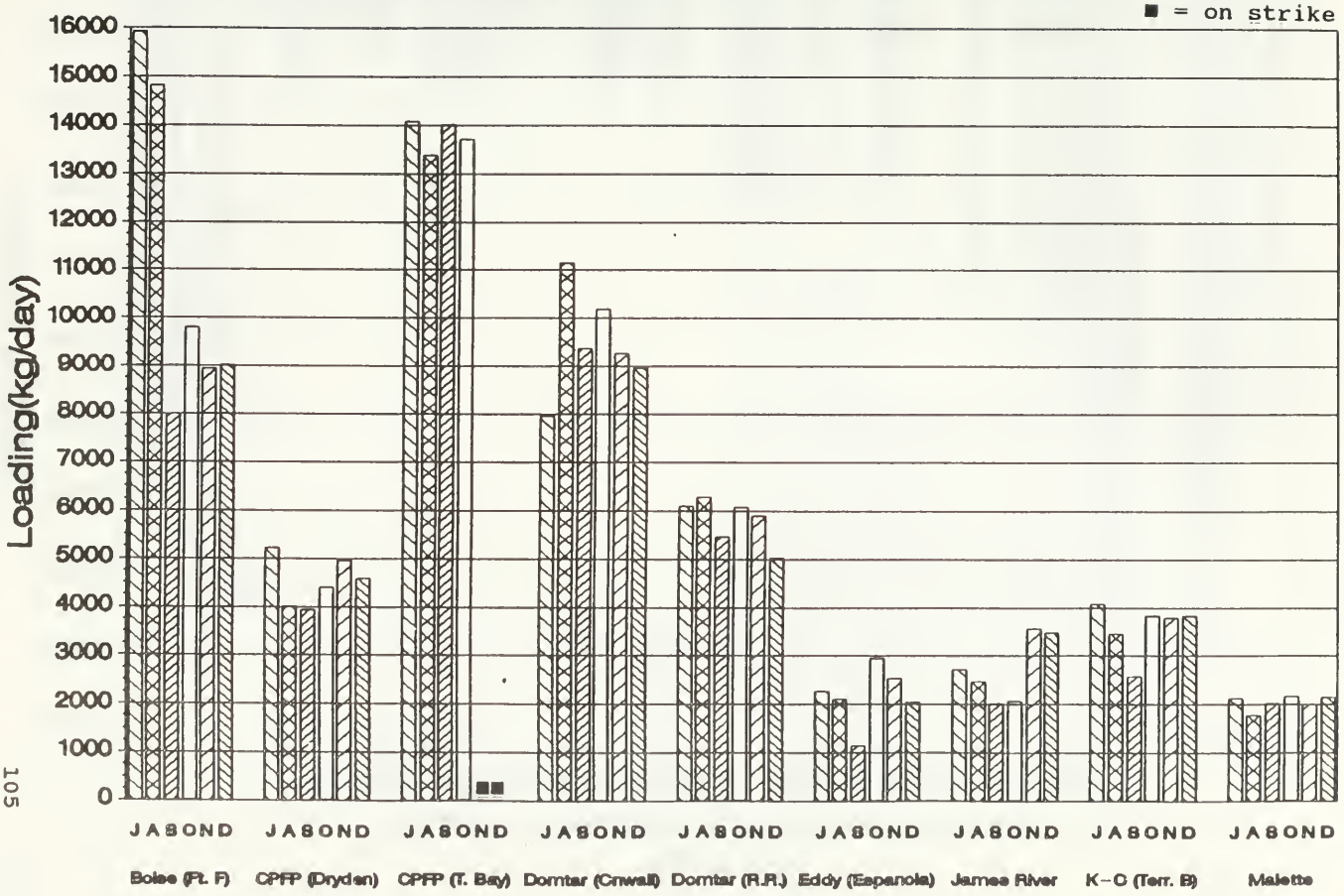


Figure 2.5
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of Total Suspended Solids



# Figure 2.6
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Total Suspended Solids

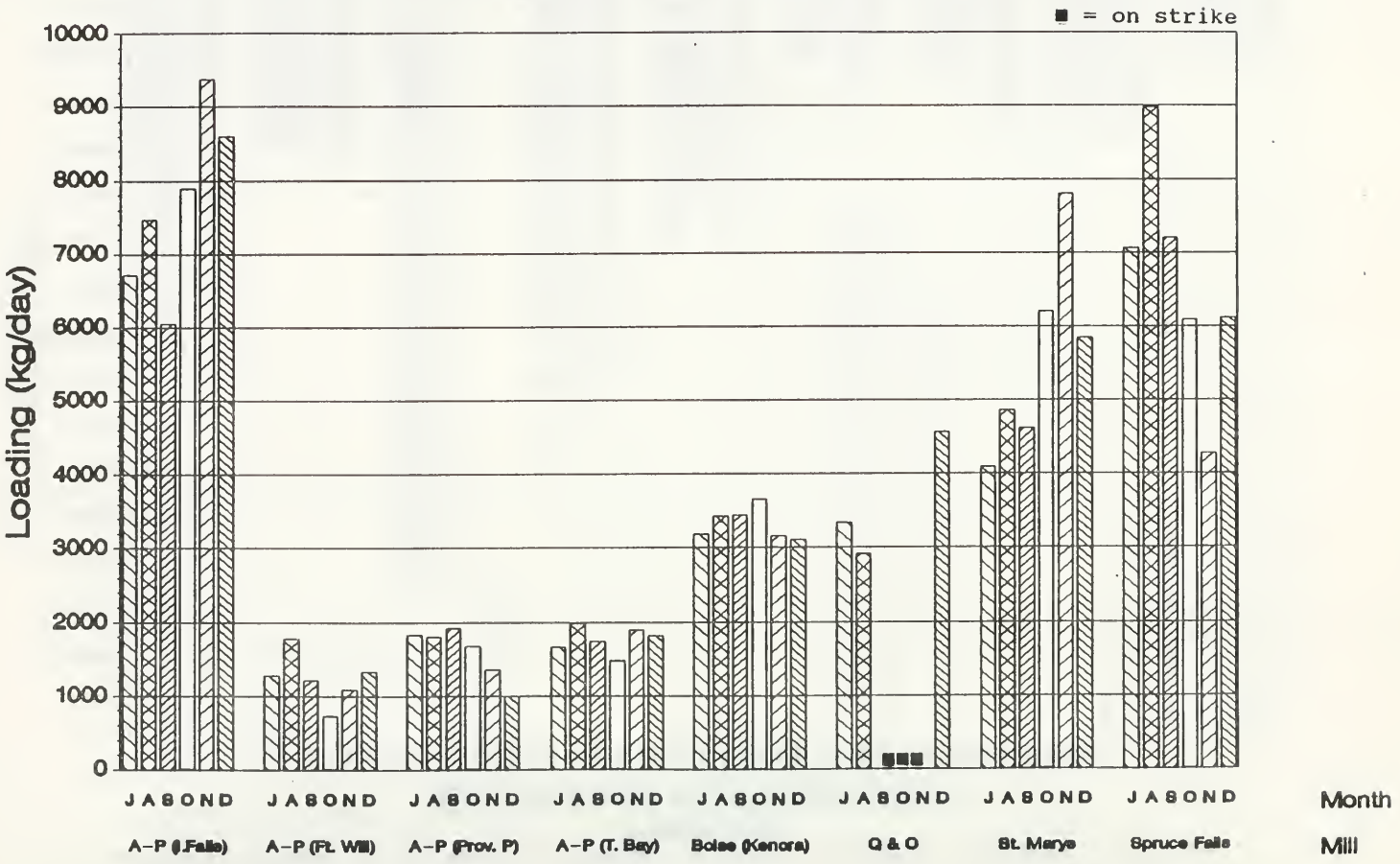
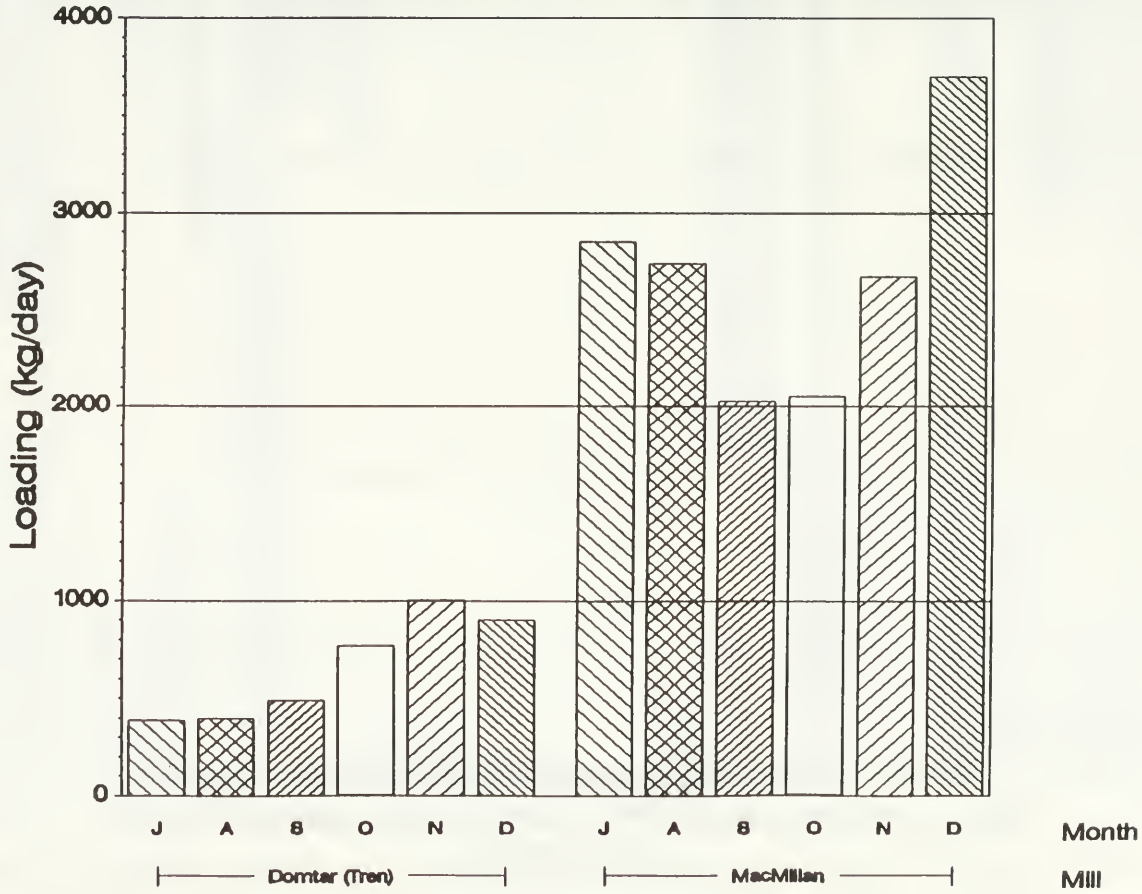


Figure 2.7
Corrugating Mill Process Effluent
Monthly Average Loading of Total Suspended Solids



# Figure 2.8
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of Total Suspended Solids

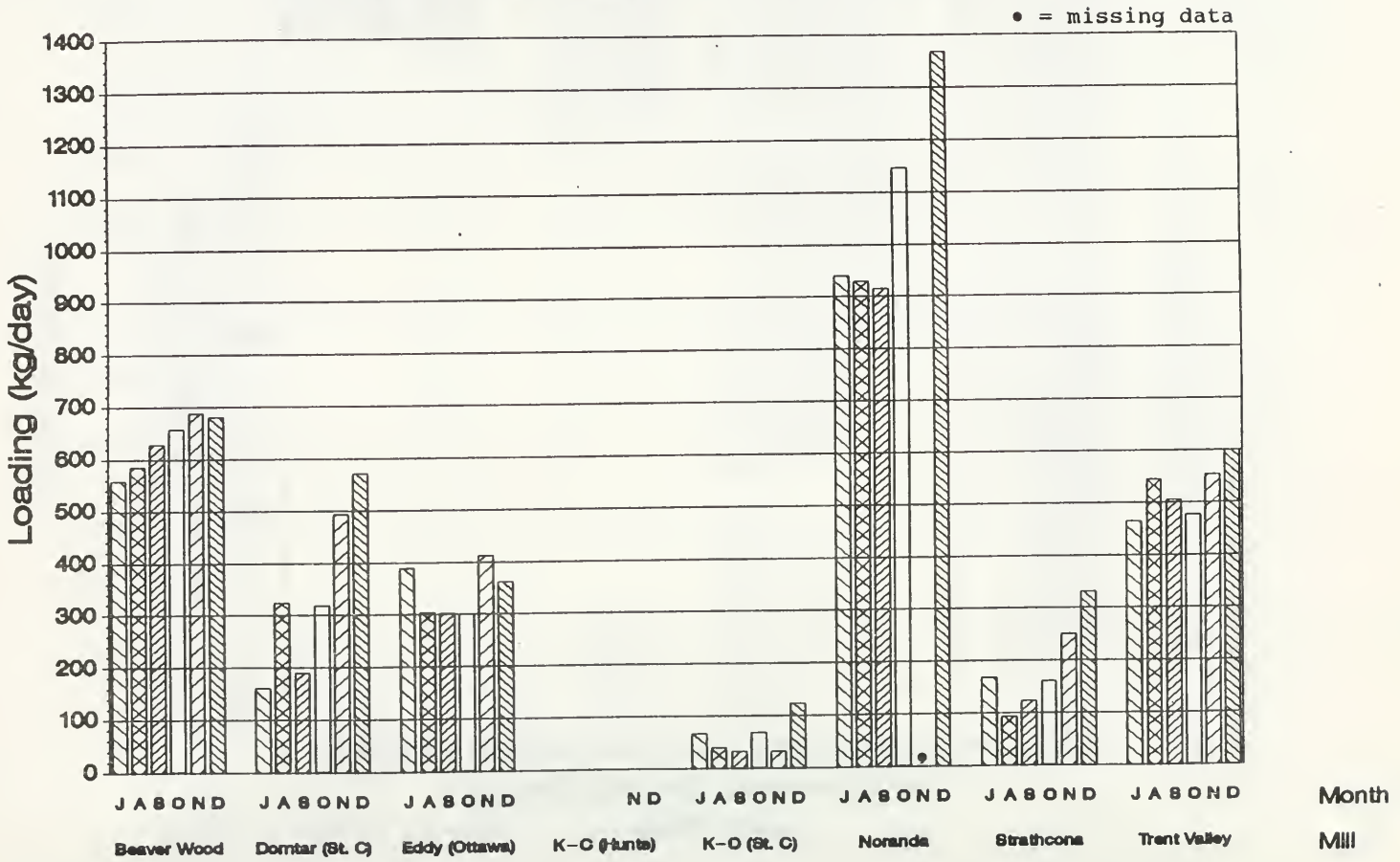


Figure 2.9
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of Adsorbable Organic Halide

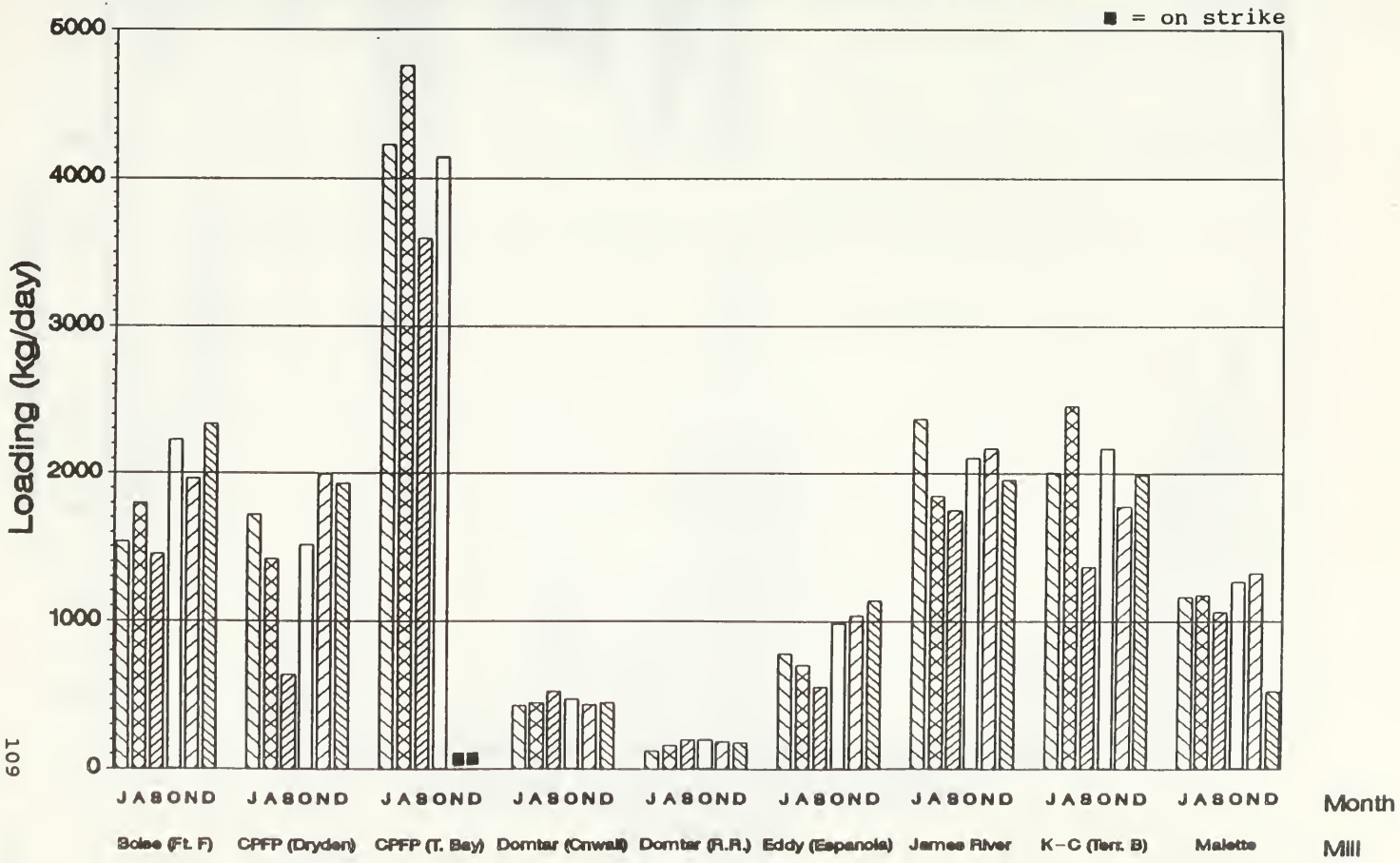
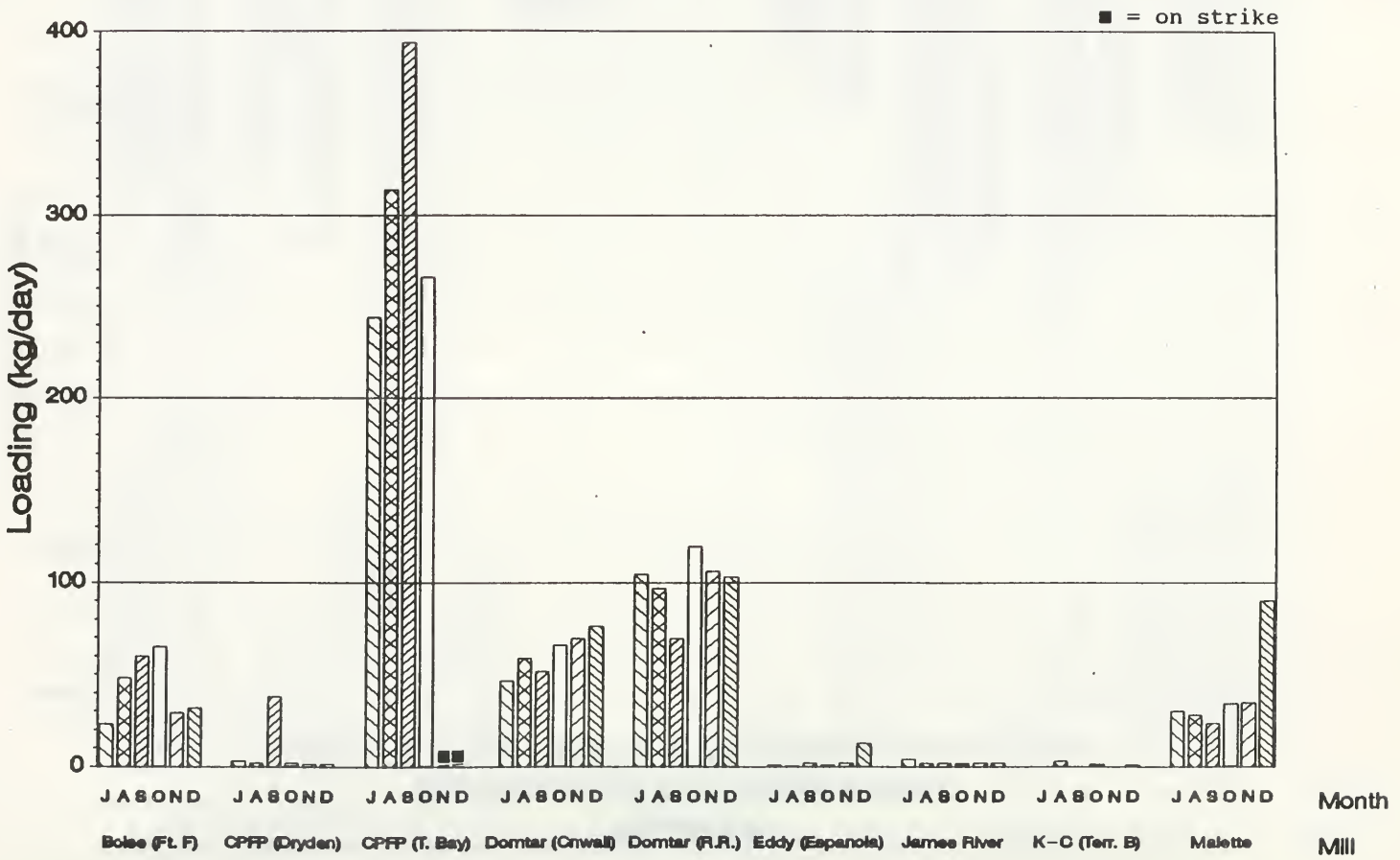


Figure 2.10
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of Dehydroabietic Acid



## Figure 2.11
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Dehydroabietic Acid

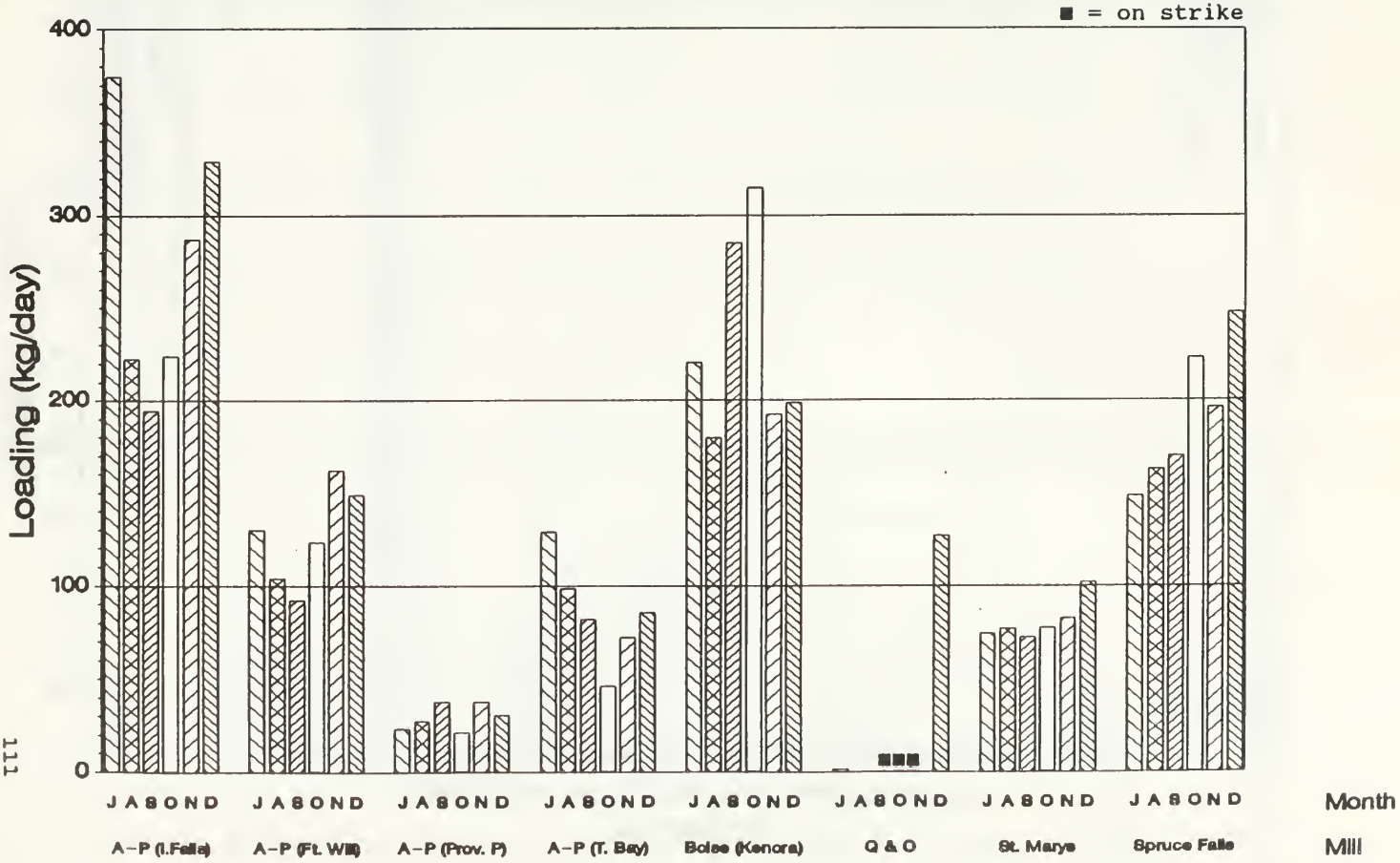
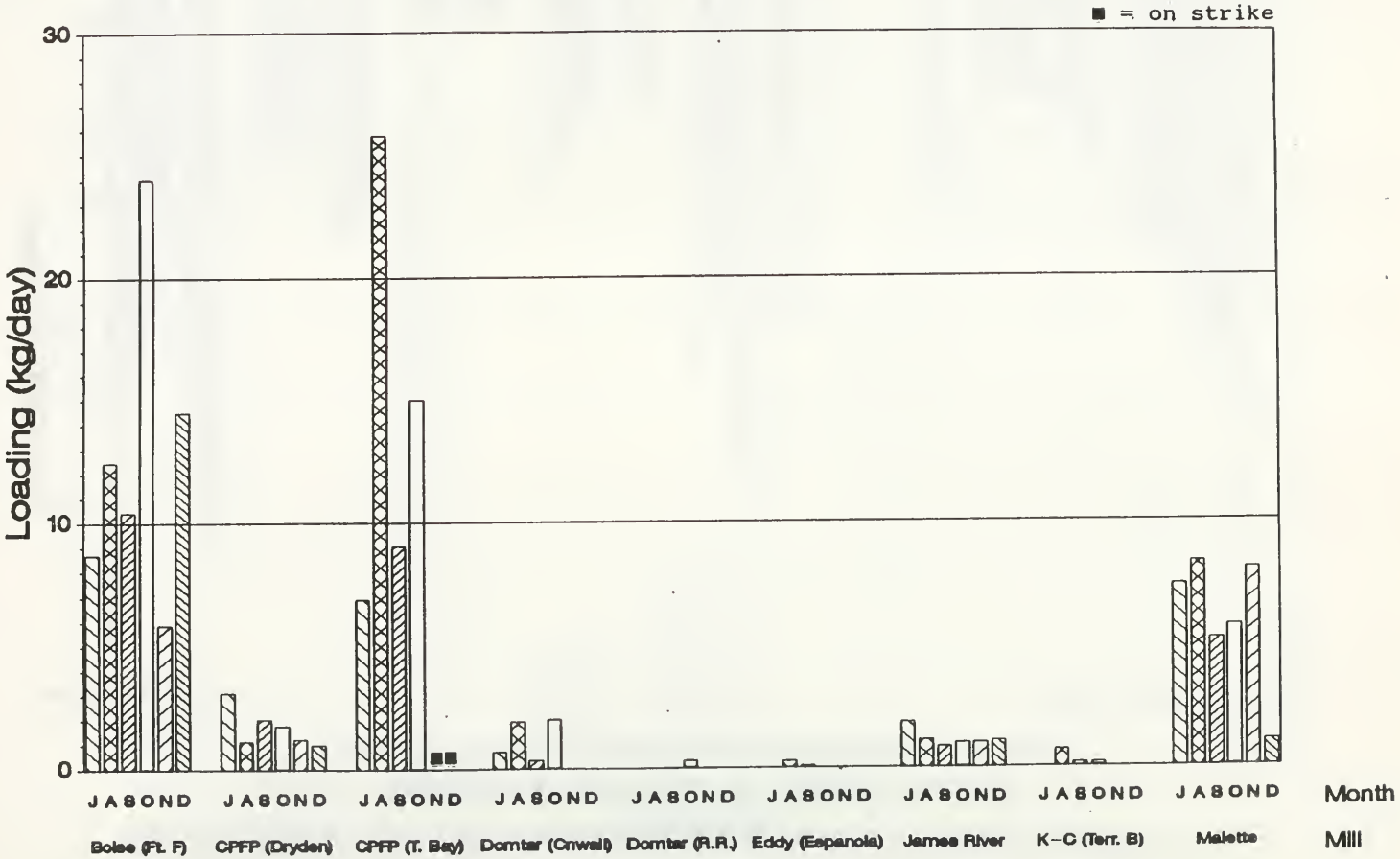
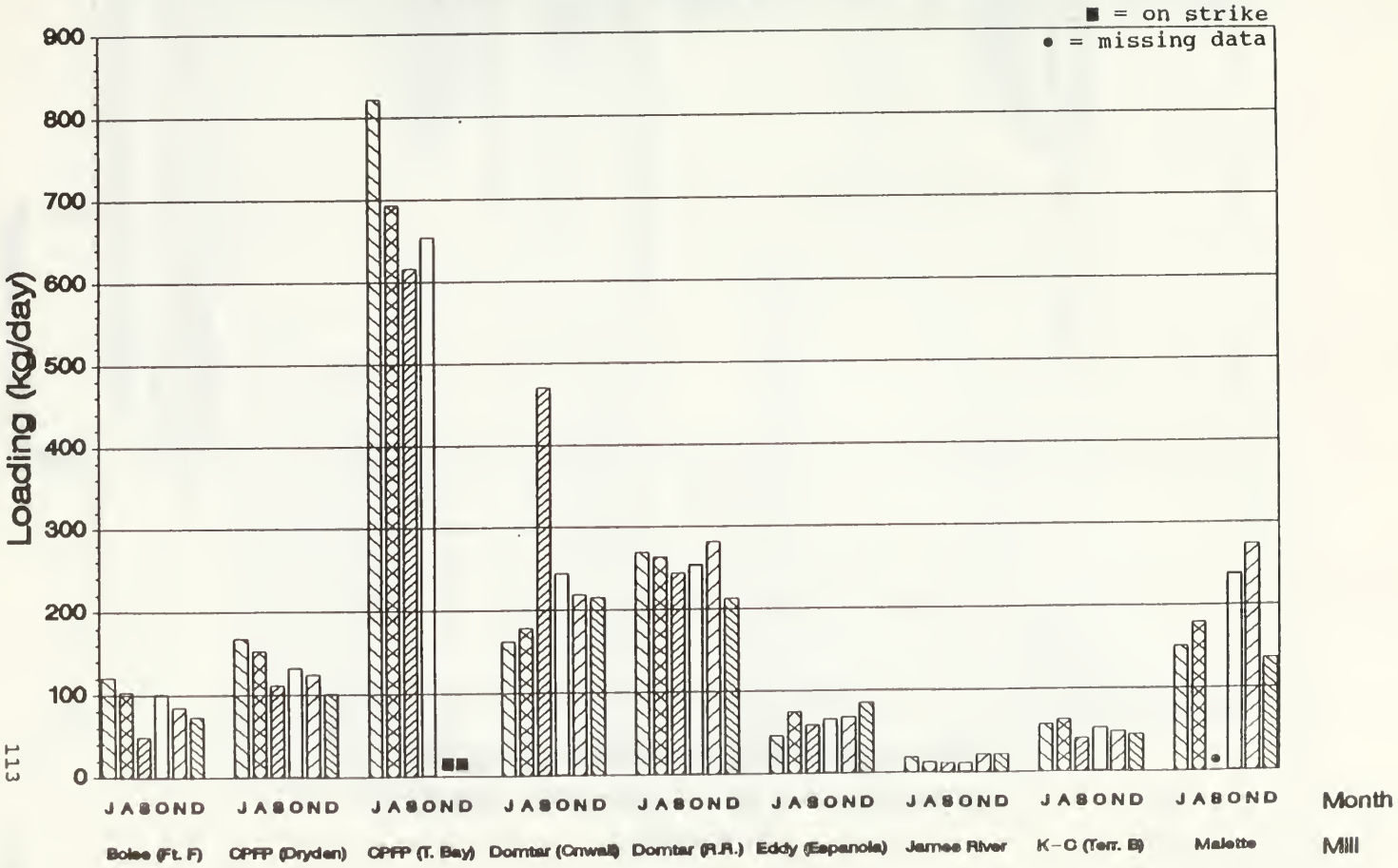


Figure 2.12
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of Dichlorodehydroabietic Acid



## Figure 2.13
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Loading of Aluminum



# Figure 2.14
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Aluminum

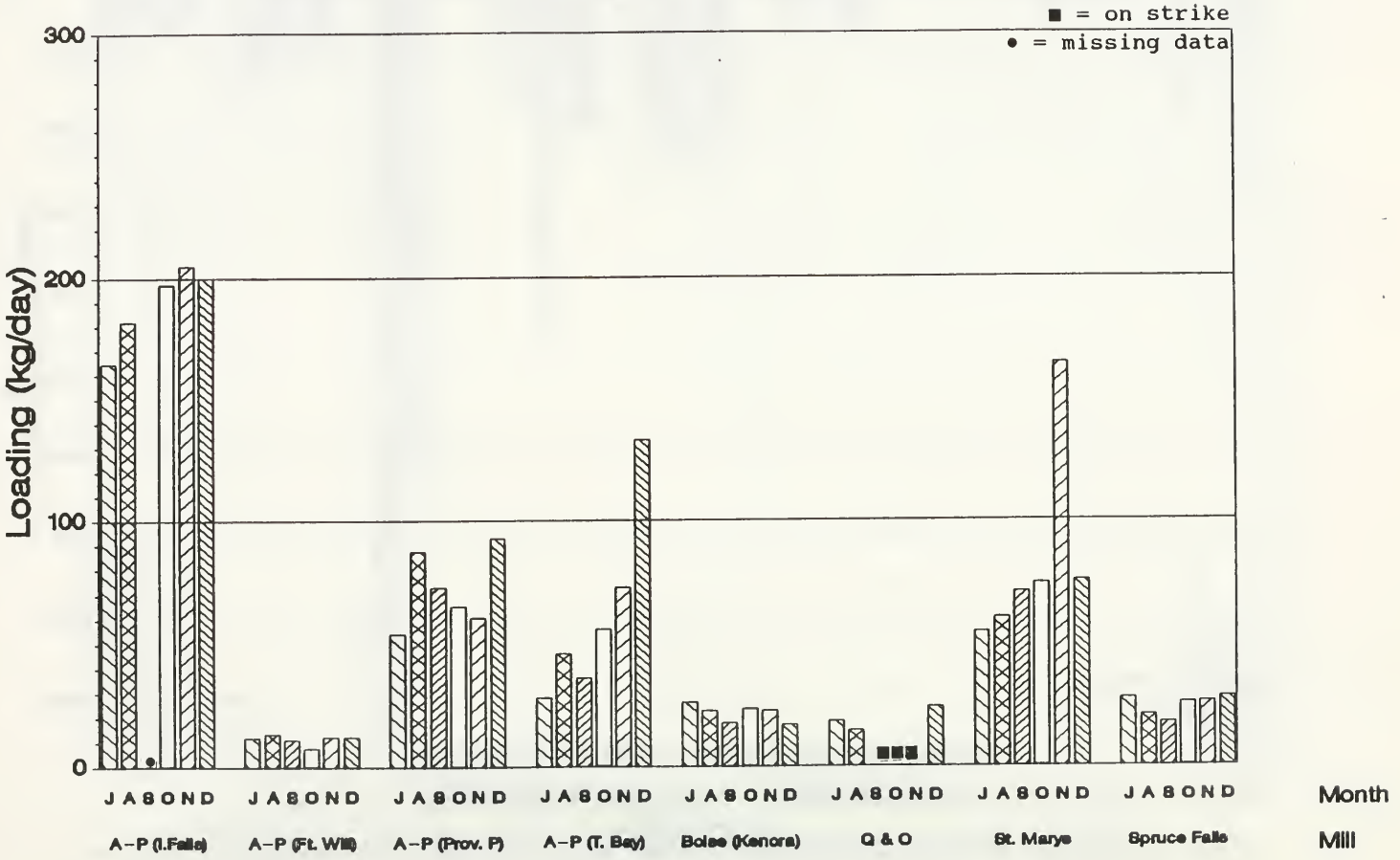
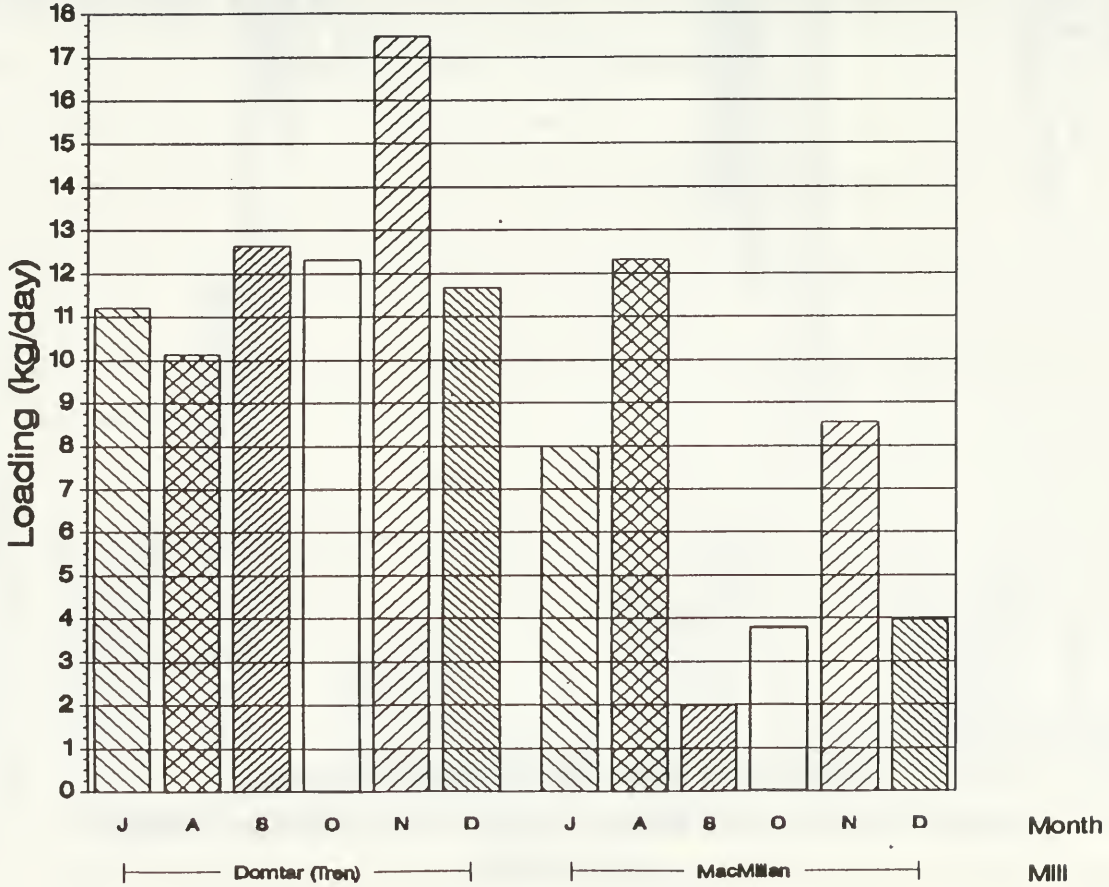
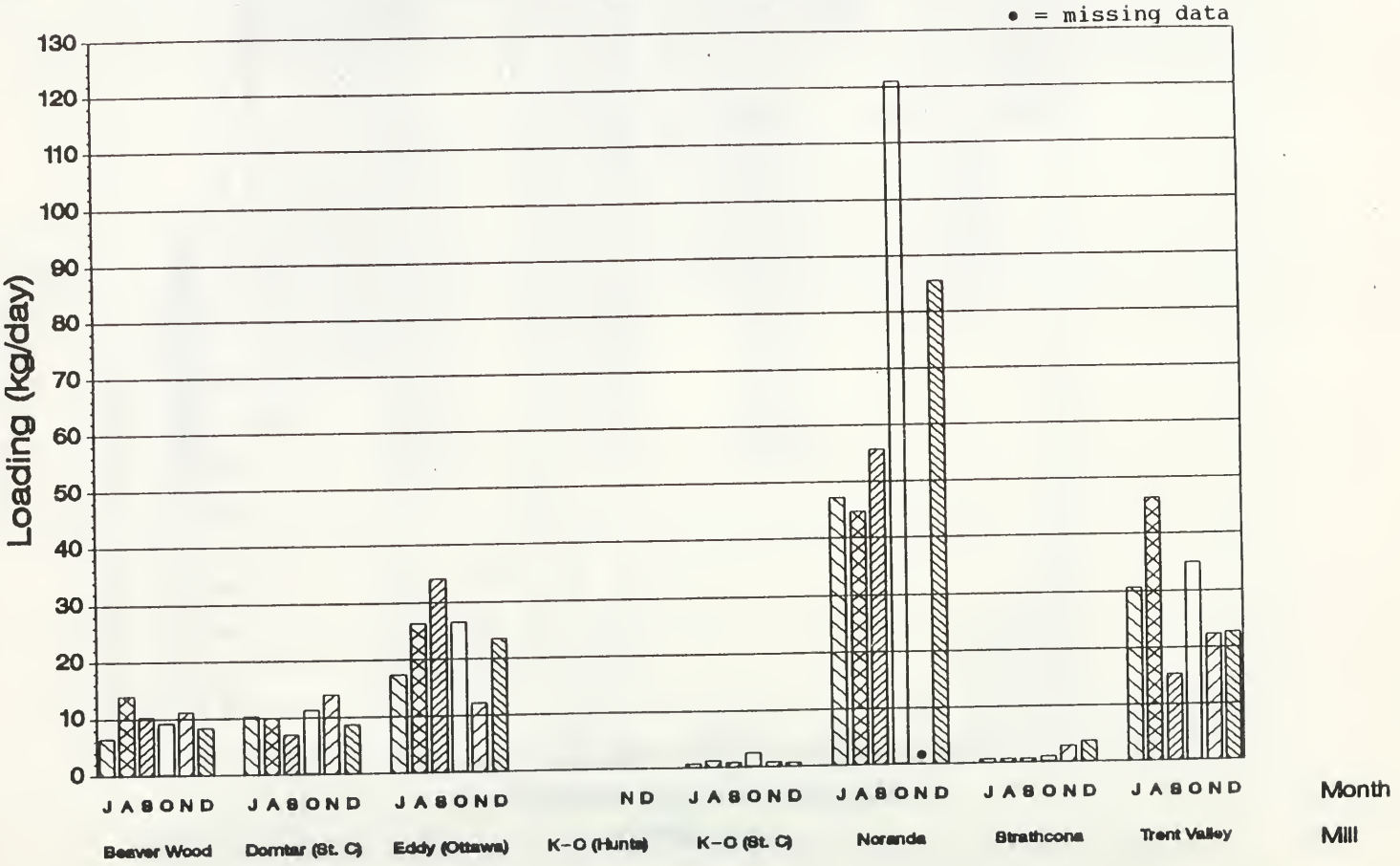


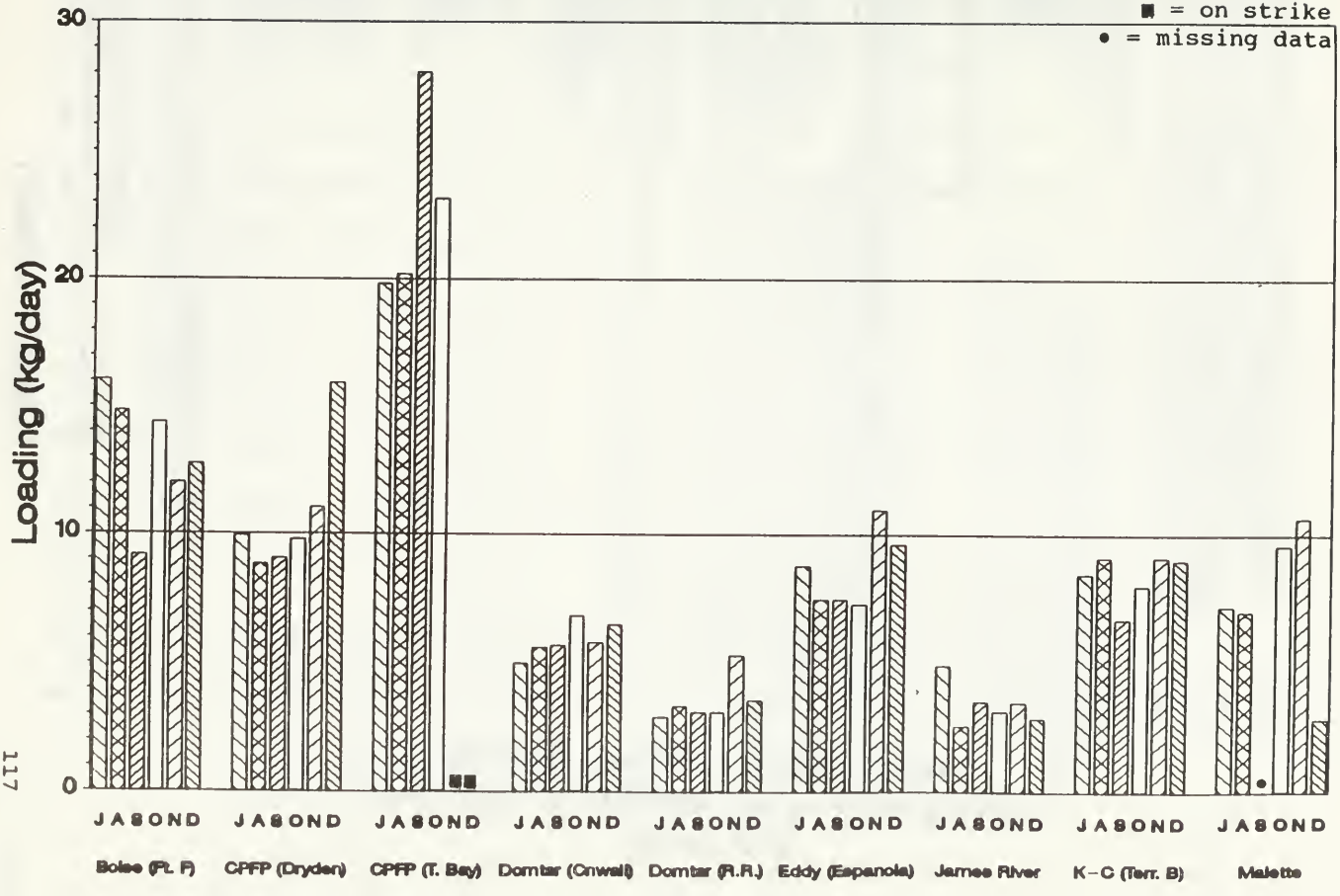
Figure 2.15
Corrugating Mill Process Effluent
Monthly Average Loading of Aluminum



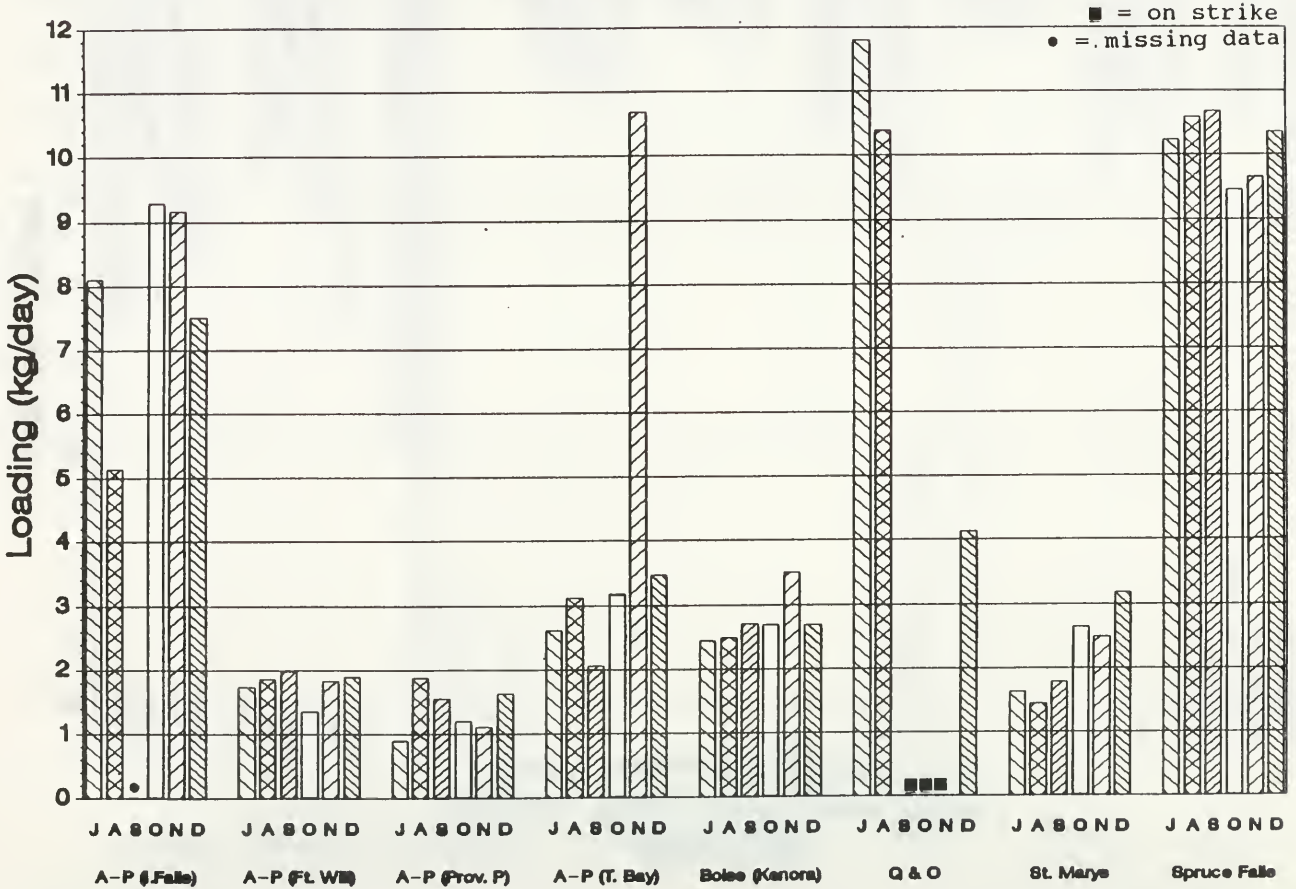
# Figure 2.16
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of Aluminum



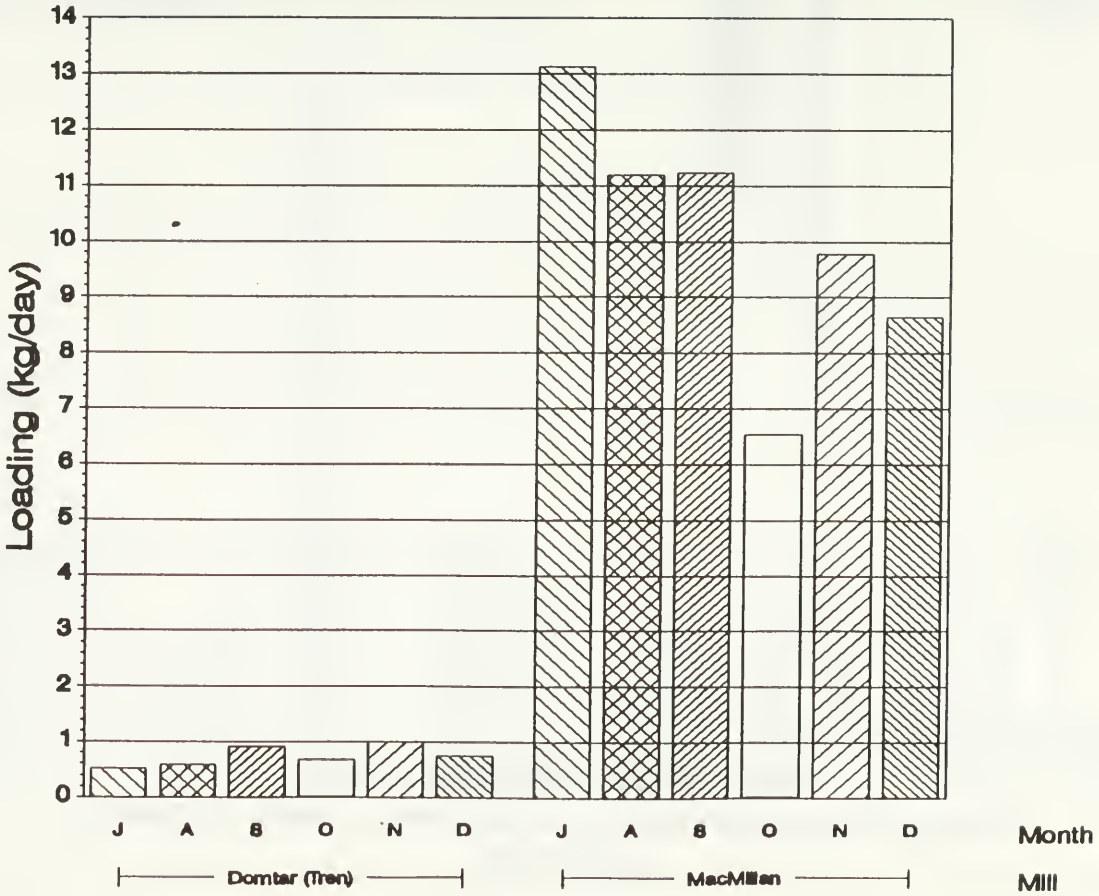
## Figure 2.17
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Loading of Zinc



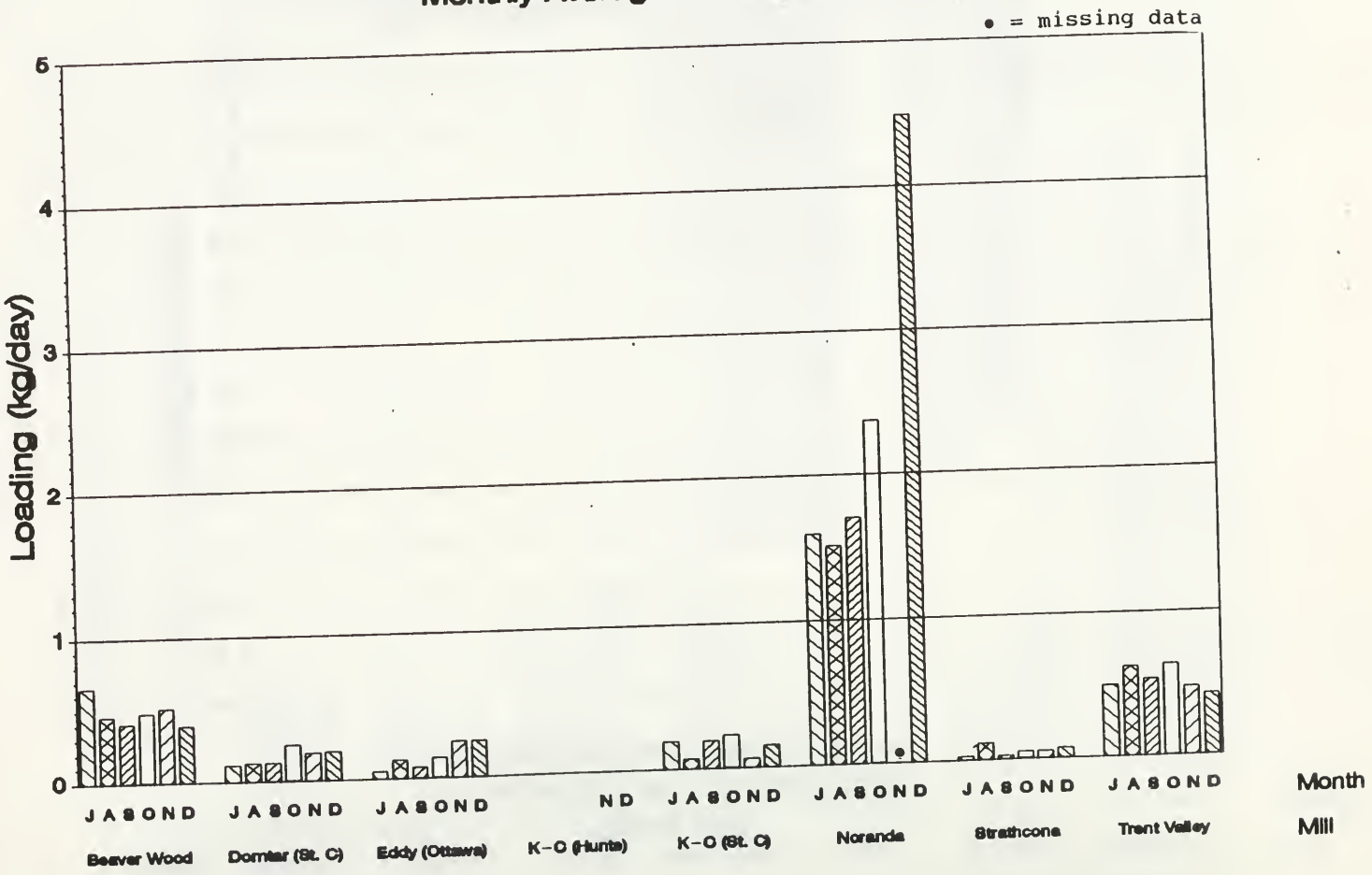
# Figure 2.18
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Zinc



## Figure 2.19
## Corrugating Mill Process Effluent
## Monthly Average Loading of Zinc



# Figure 2.20
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of Zinc



# Figure 2.21
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Loading of COD

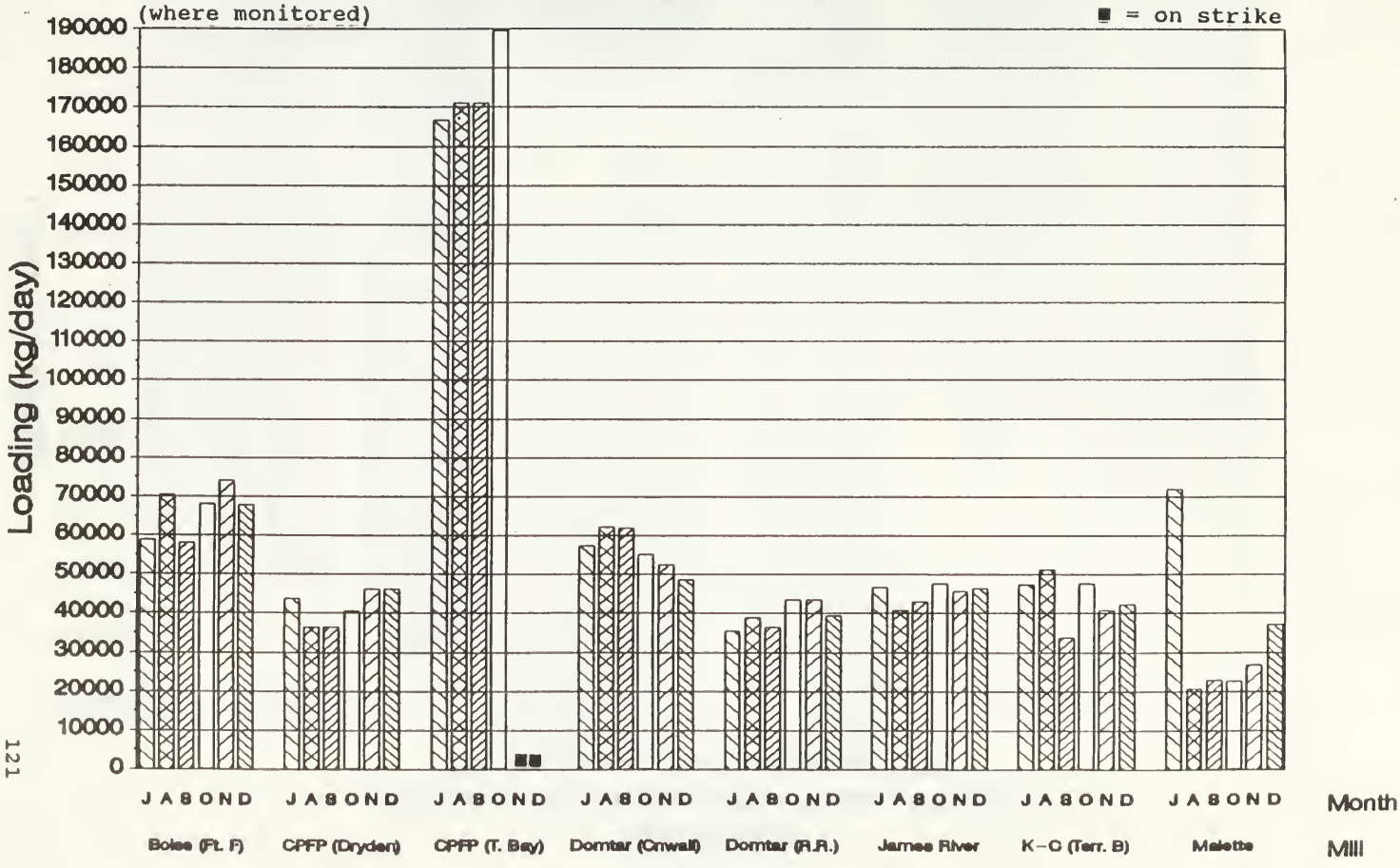
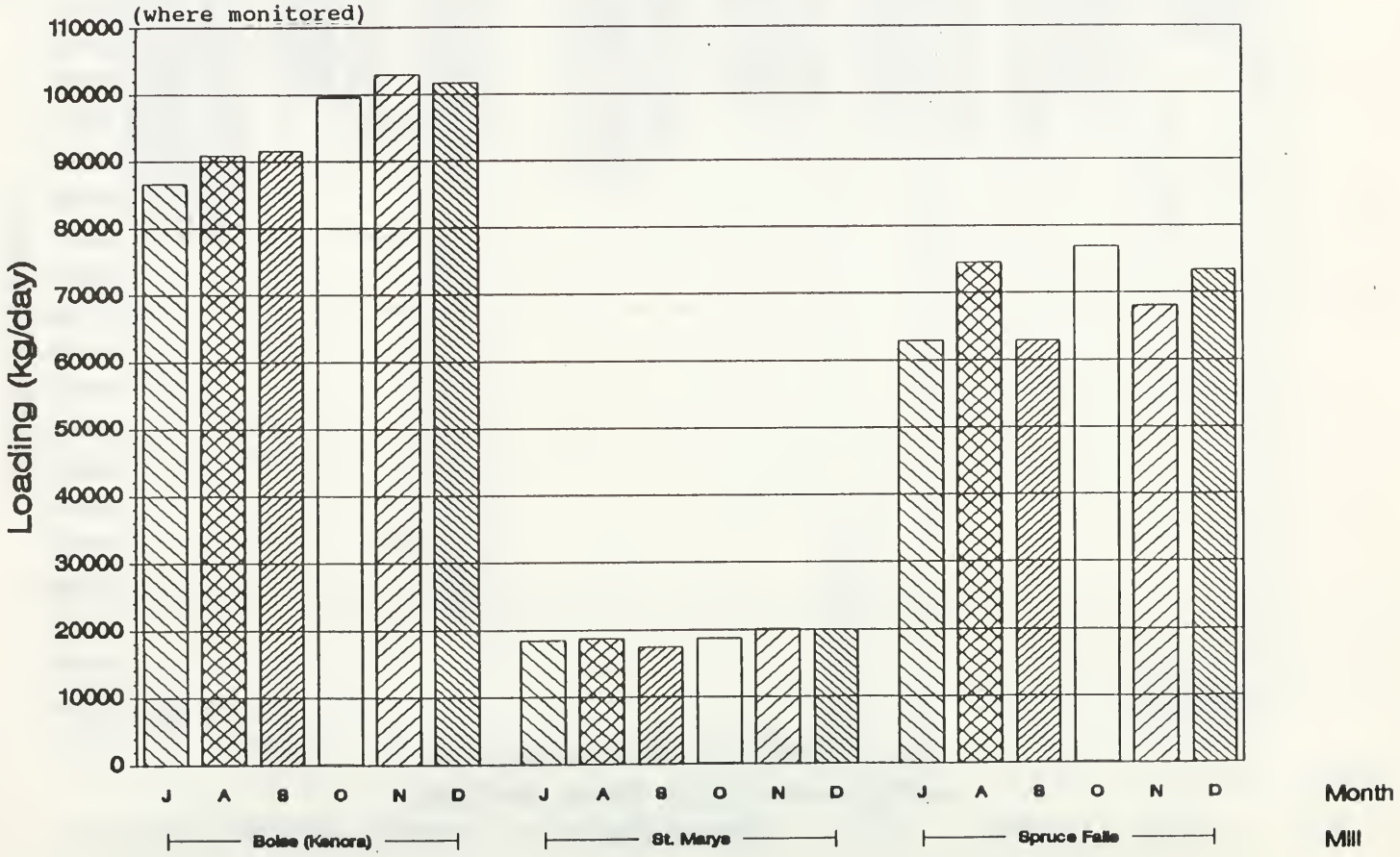
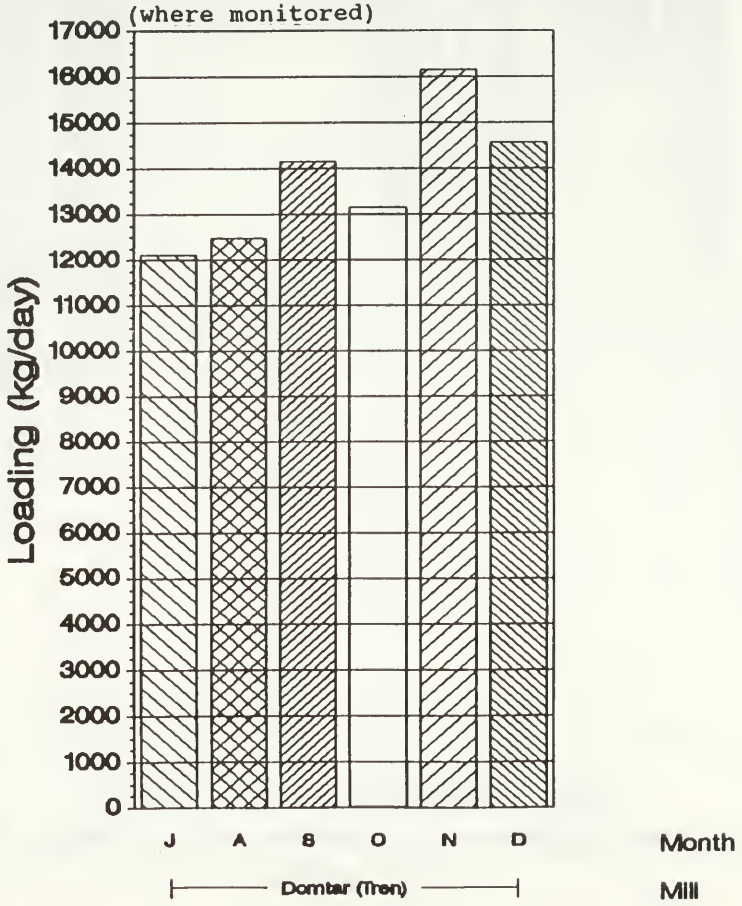


Figure 2.22
Sulphite – Mechanical Mill Process Effluent
Monthly Average Loading of COD



## Figure 2.23
## Corrugating Mill Process Effluent
## Monthly Average Loading of COD



# Figure 2.24
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of COD

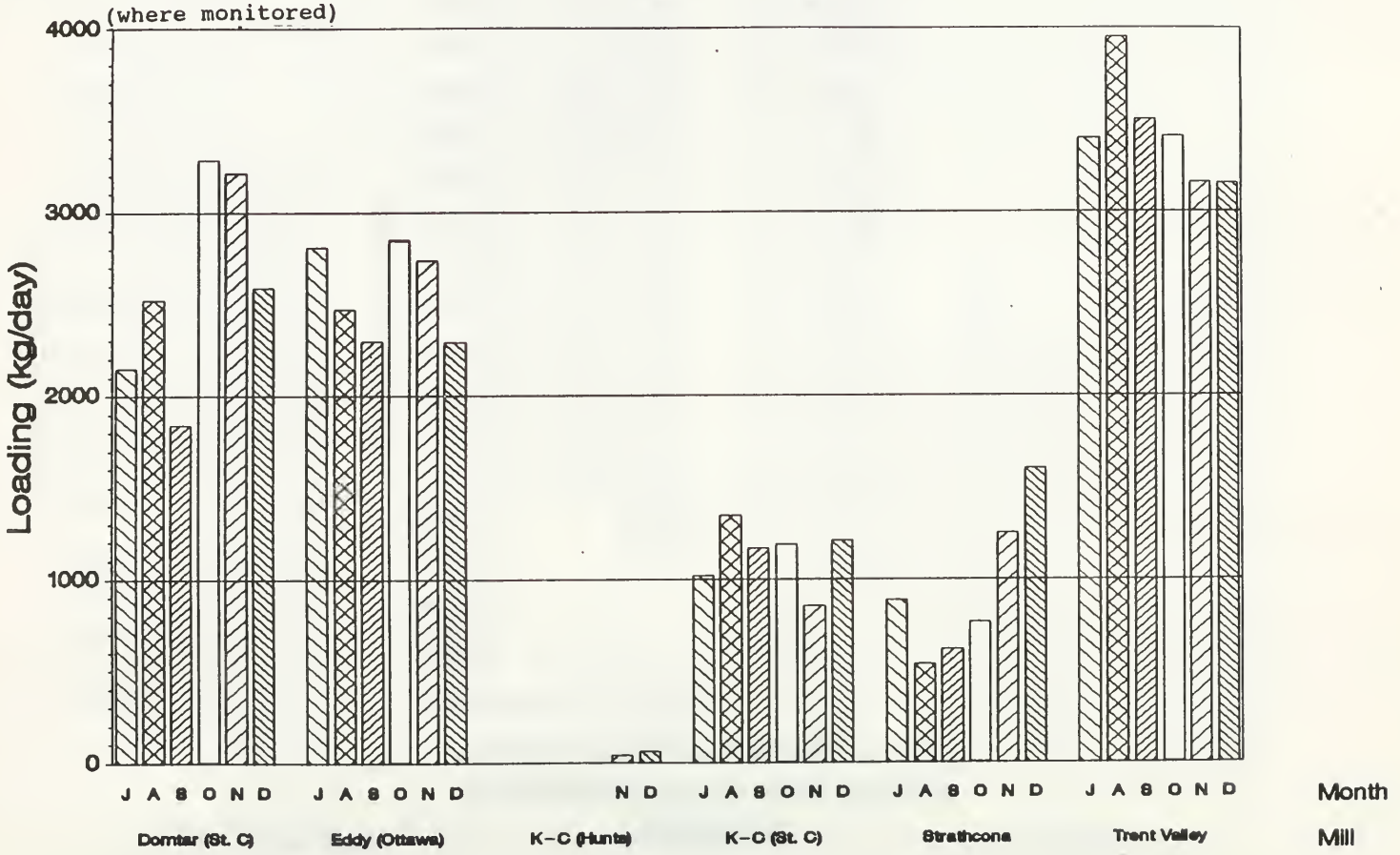
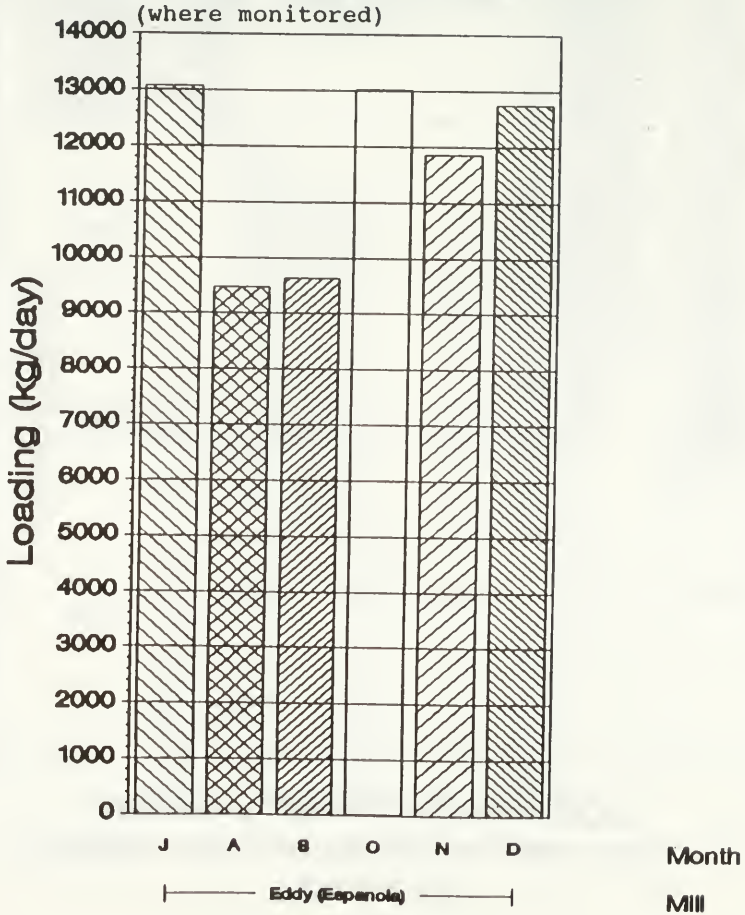
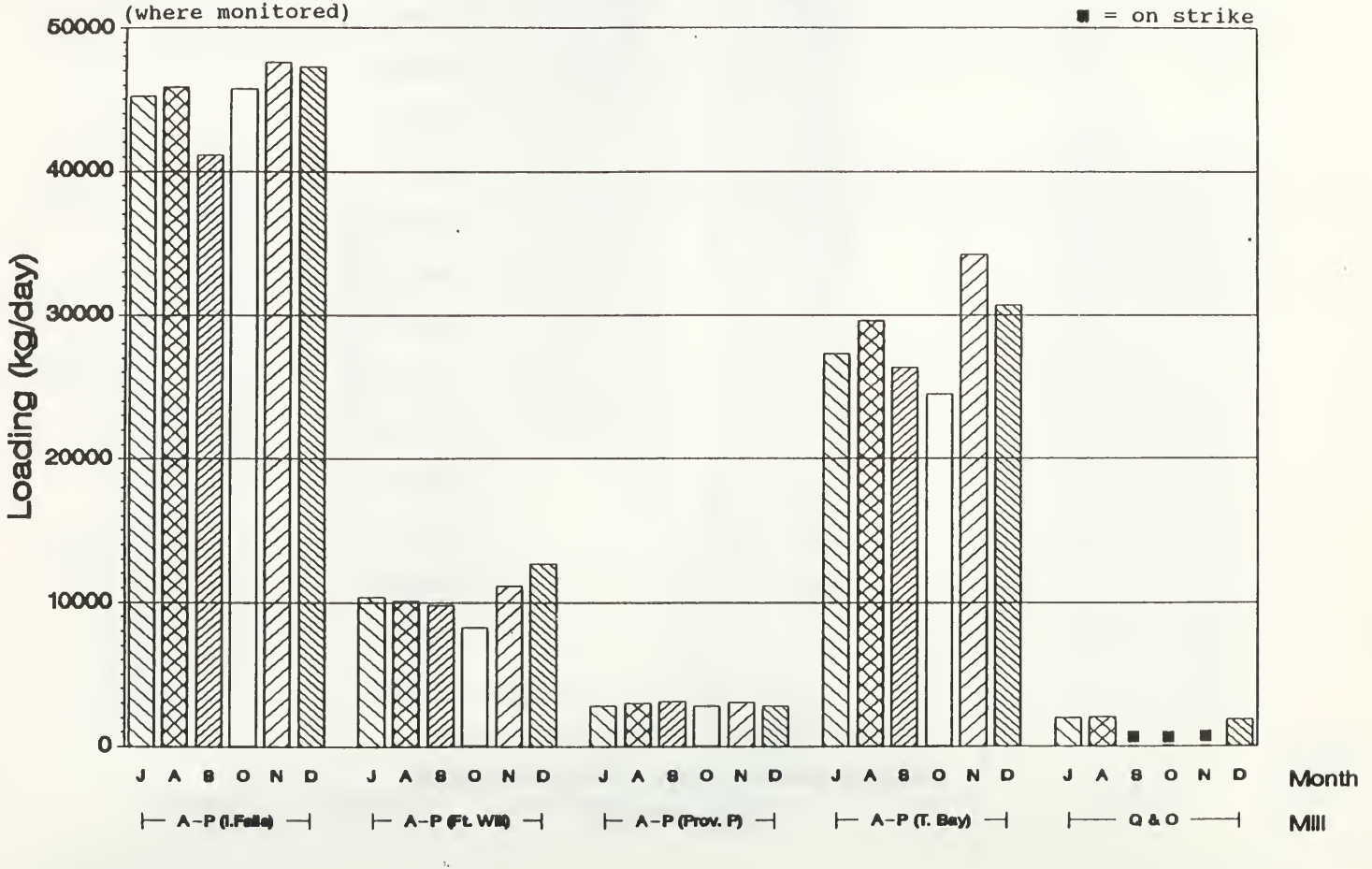


Figure 2.25
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of DOC



# Figure 2.26
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of DOC



## Figure 2.27
## Corrugating Mill Process Effluent
## Monthly Average Loading of DOC

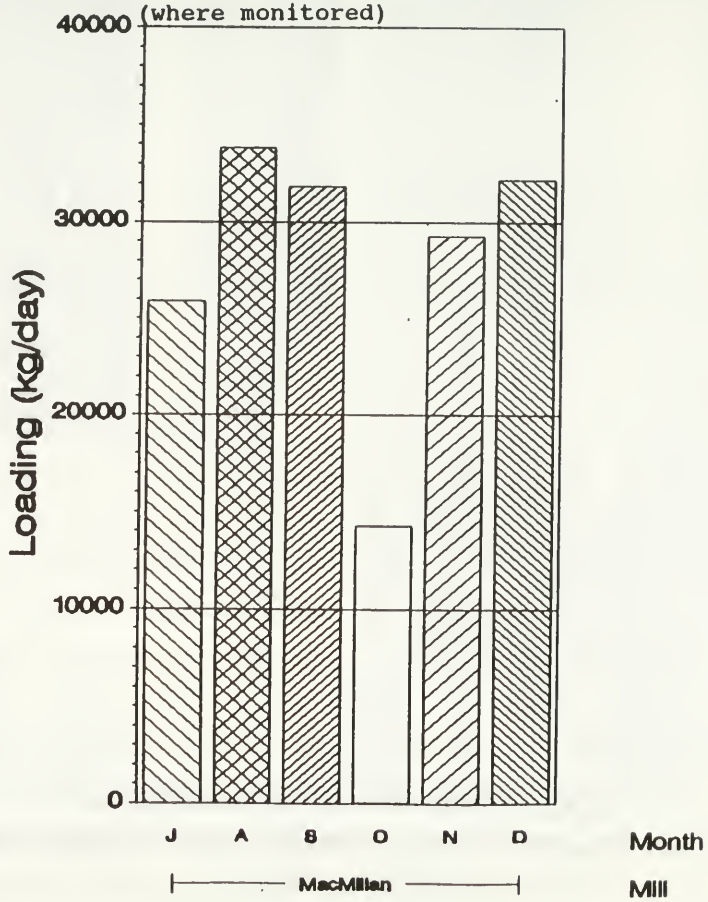


Figure 2.28

Deinking – Board – Fine Papers – Tissue Mill Process Effluent

Monthly Average Loading of DOC

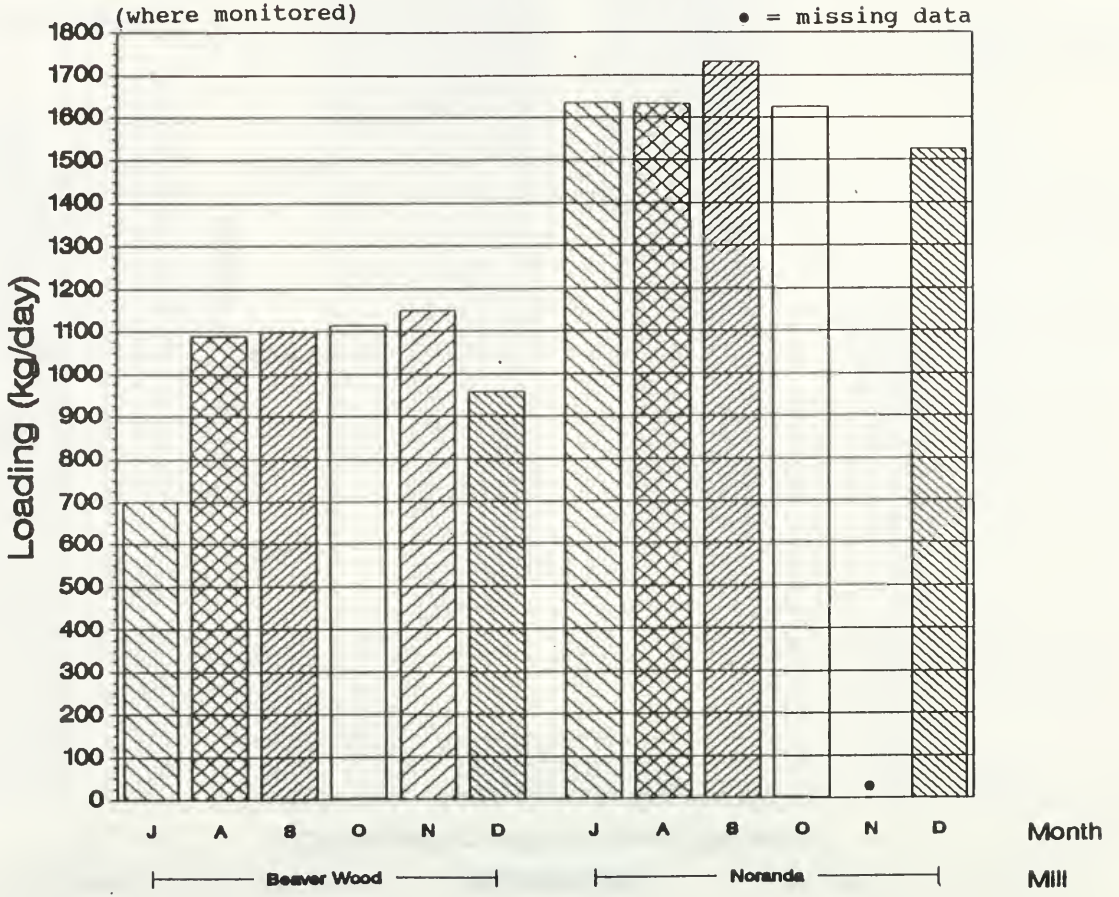


Figure 2.29
Sulphate (Kraft) Mill Process Effluent
Monthly Average Loading of Ammonia plus Ammonium

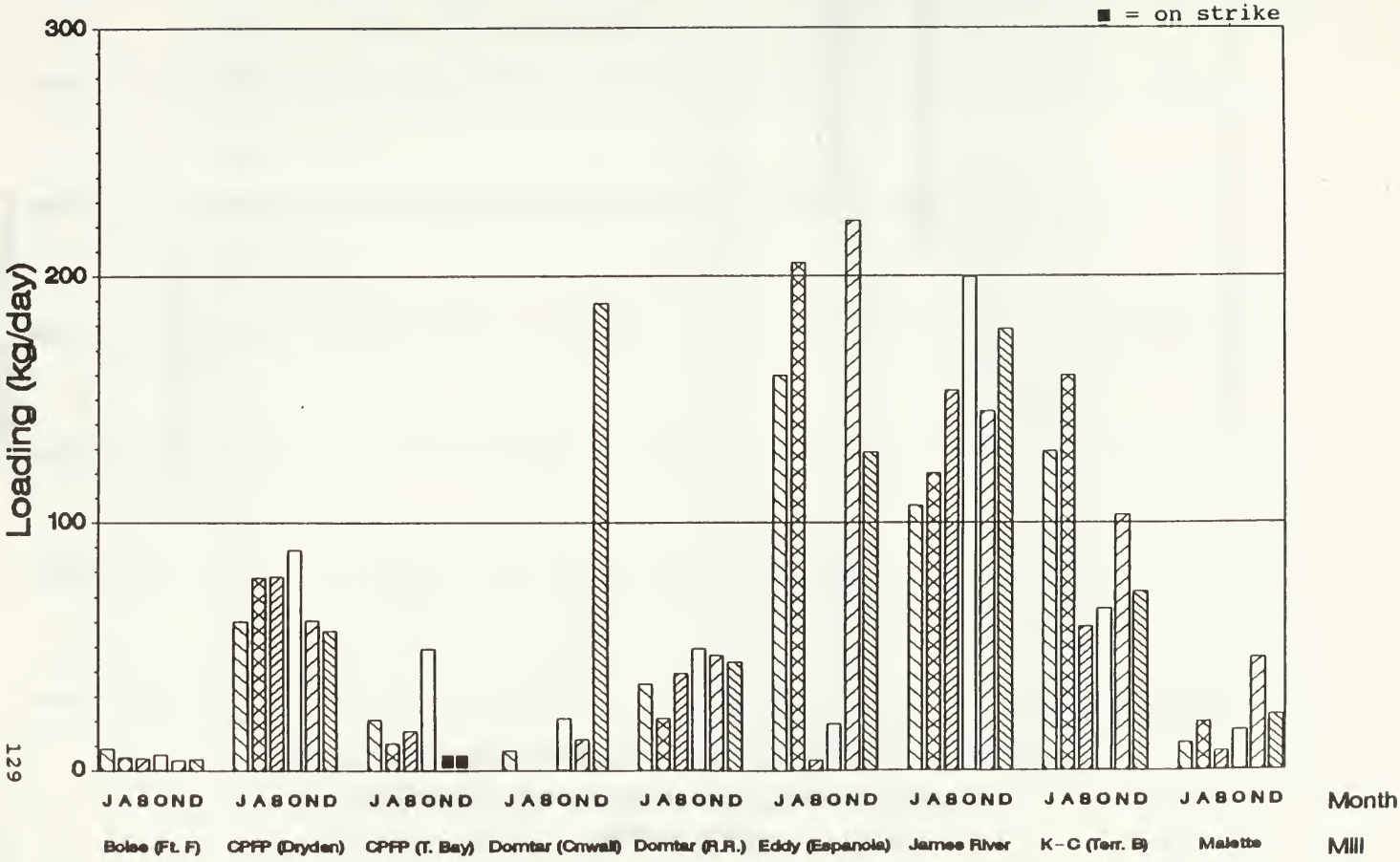


Figure 2.30
Sulphite – Mechanical Mill Process Effluent
Monthly Average Loading of Ammonia plus Ammonium

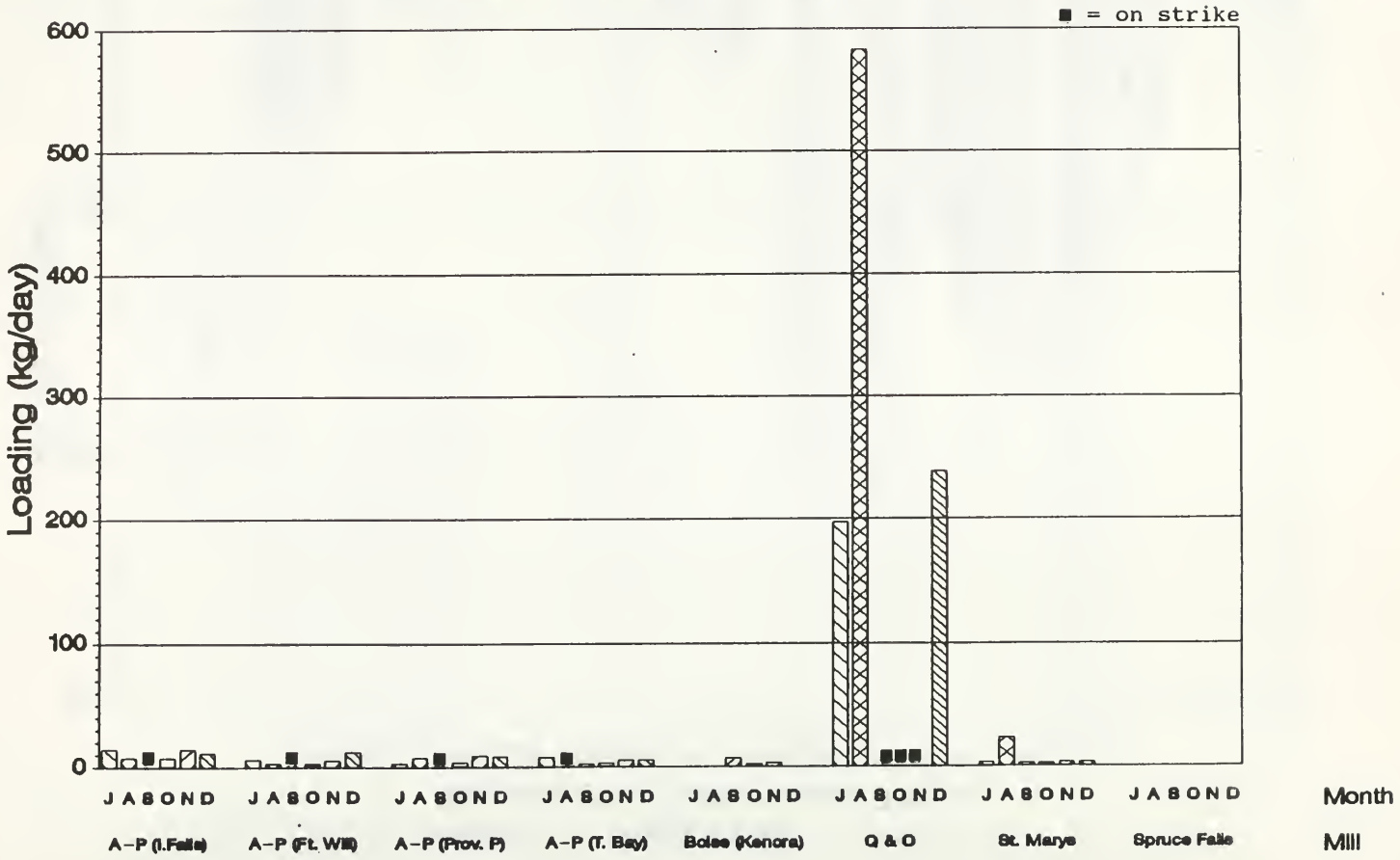


Figure 2.31
Corrugating Mill Process Effluent
Monthly Average Loading of Ammonia plus Ammonium

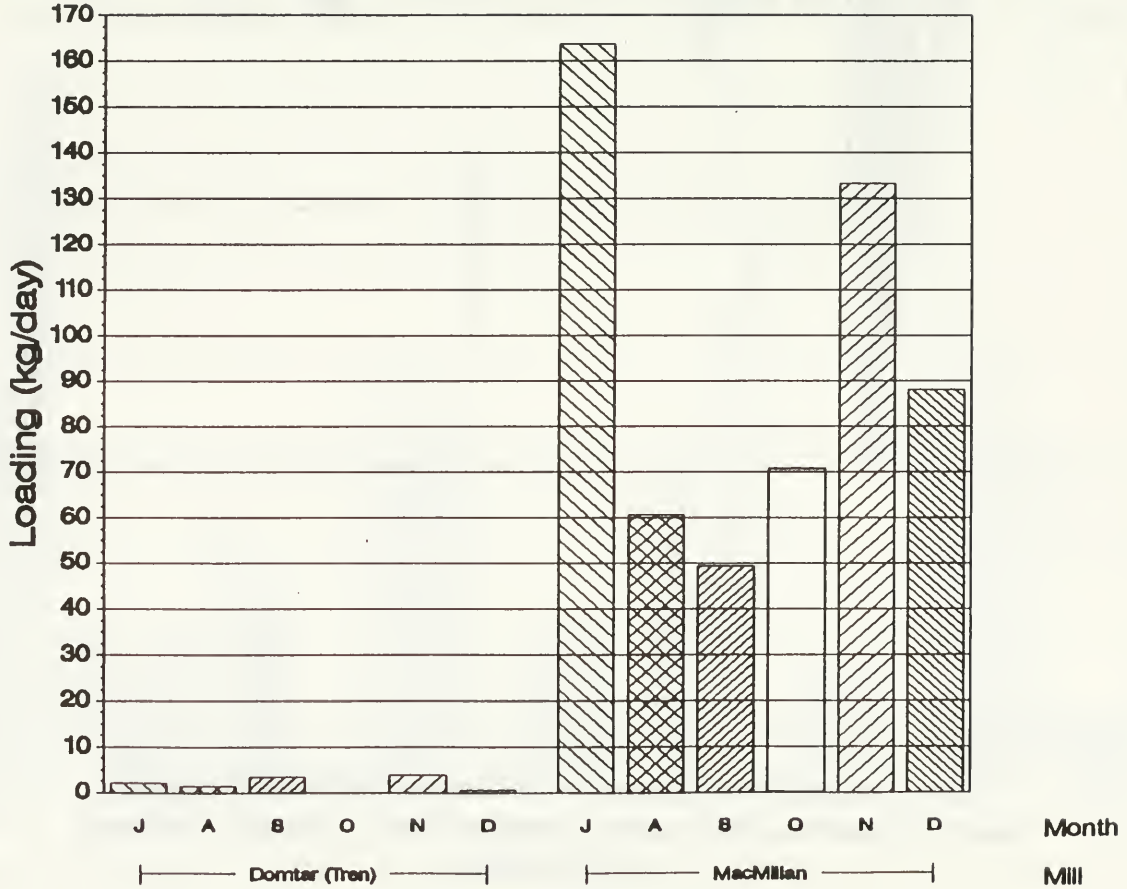
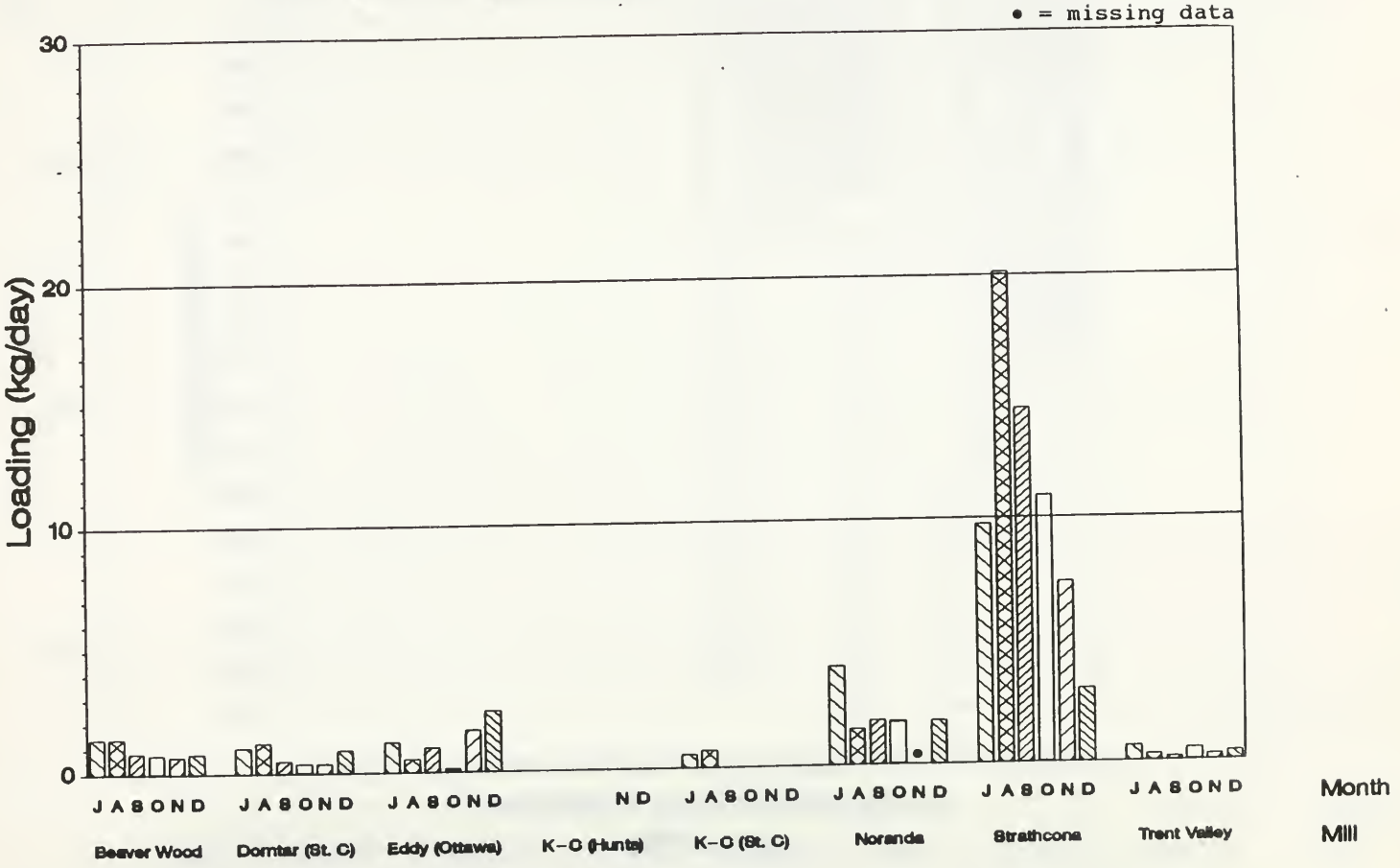


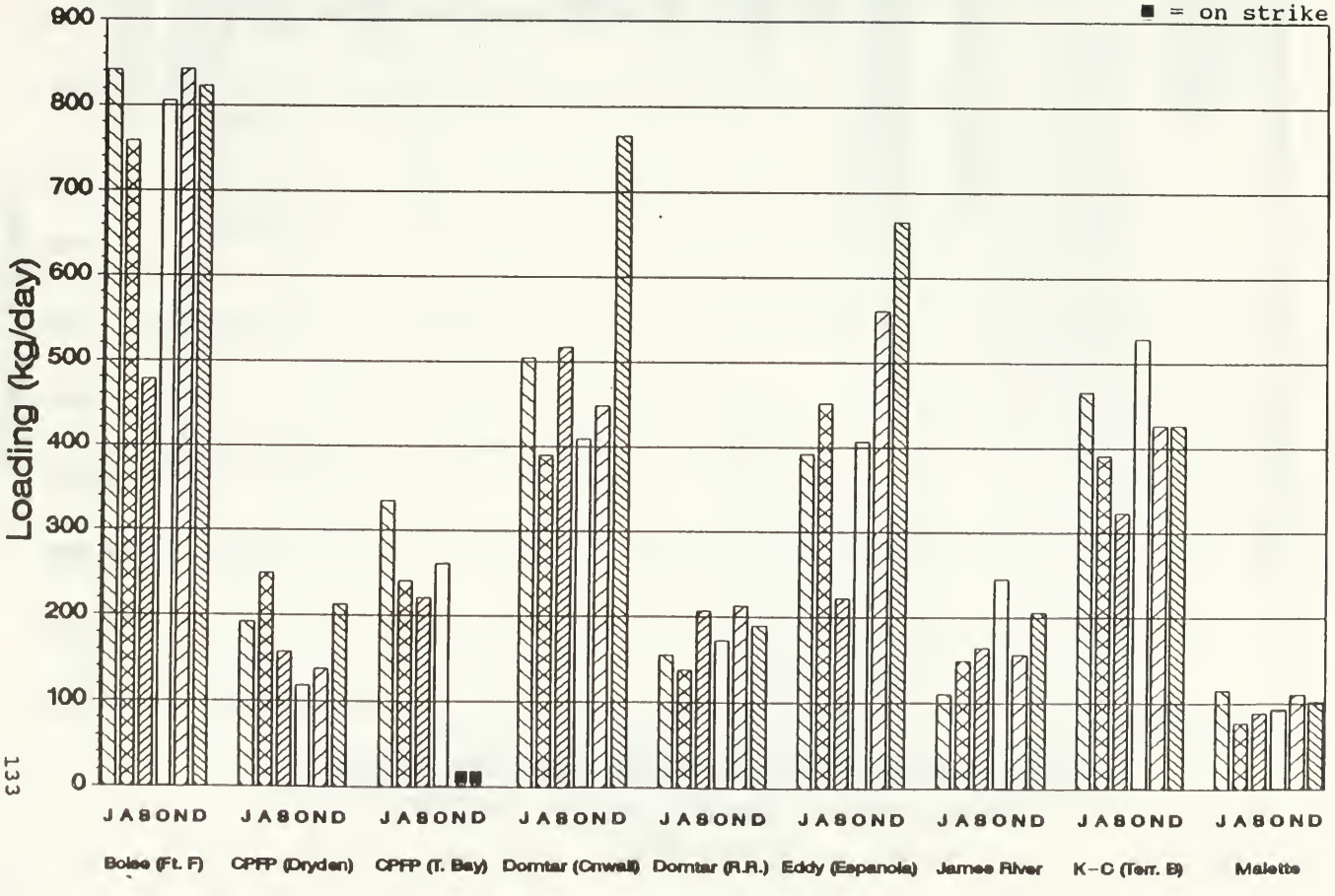
Figure 2.32

Deinking – Board – Fine Papers – Tissue Mill Process Effluent

Monthly Average Loading of Ammonia plus Ammonium



## Figure 2.33
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Loading of Total Kjeldahl Nitrogen



# Figure 2.34
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Total Kjeldahl Nitrogen

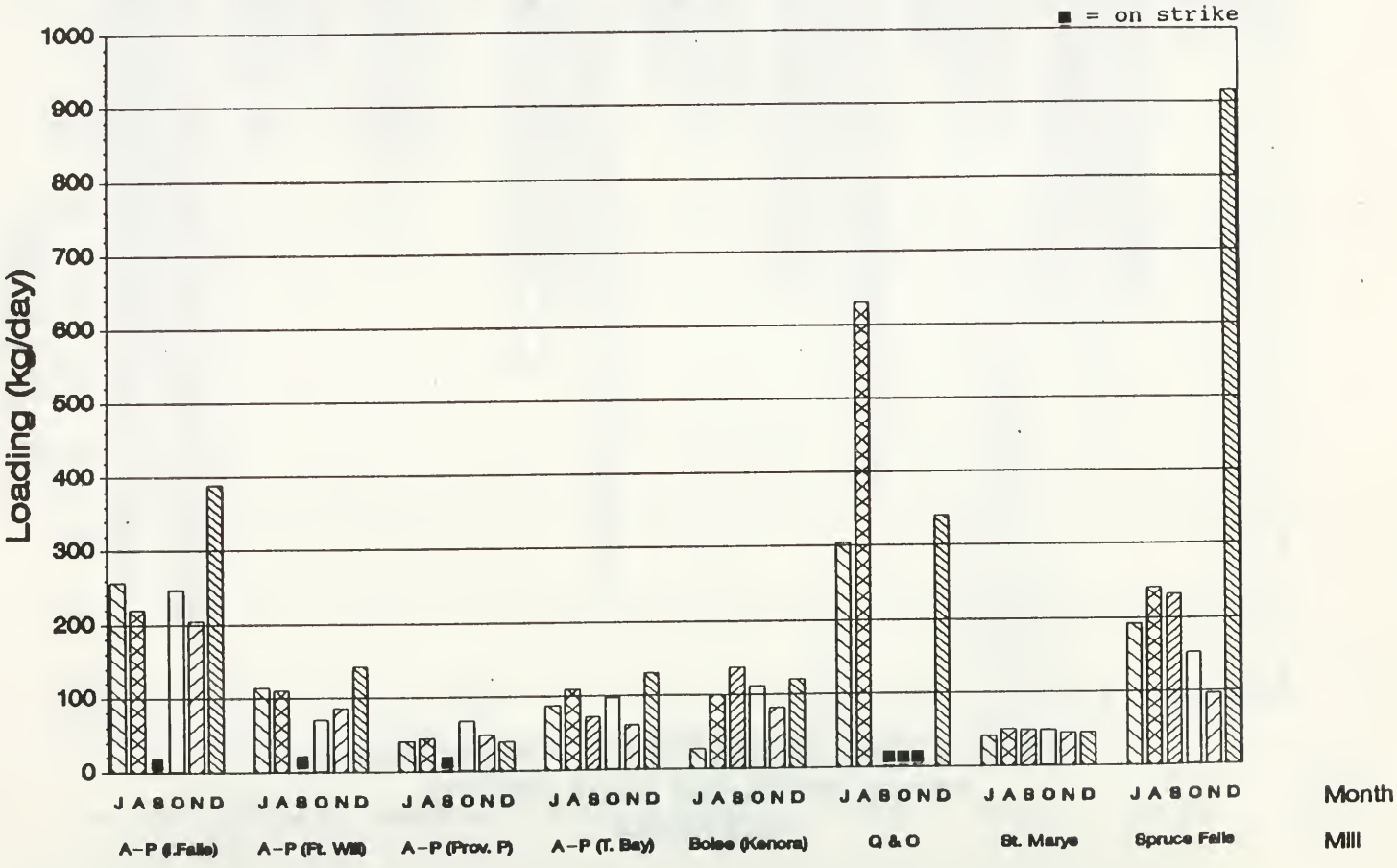
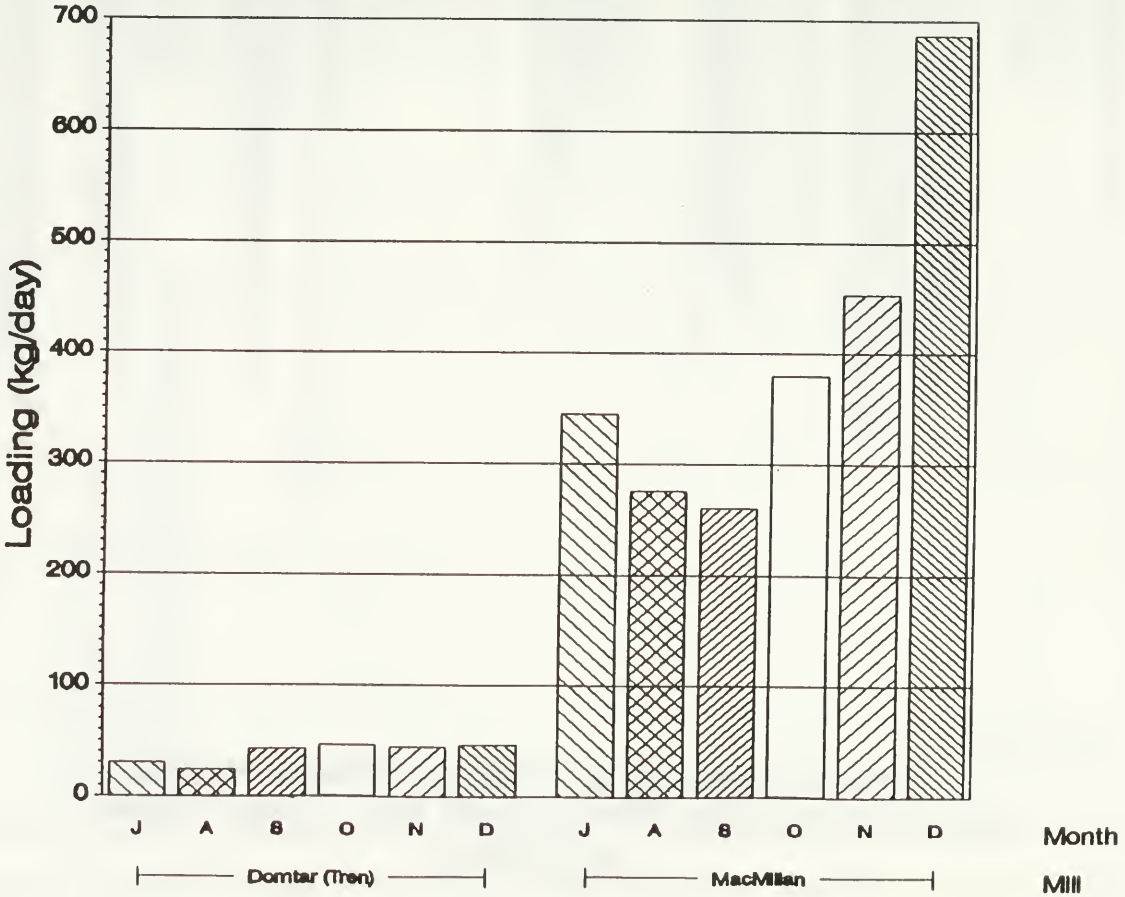
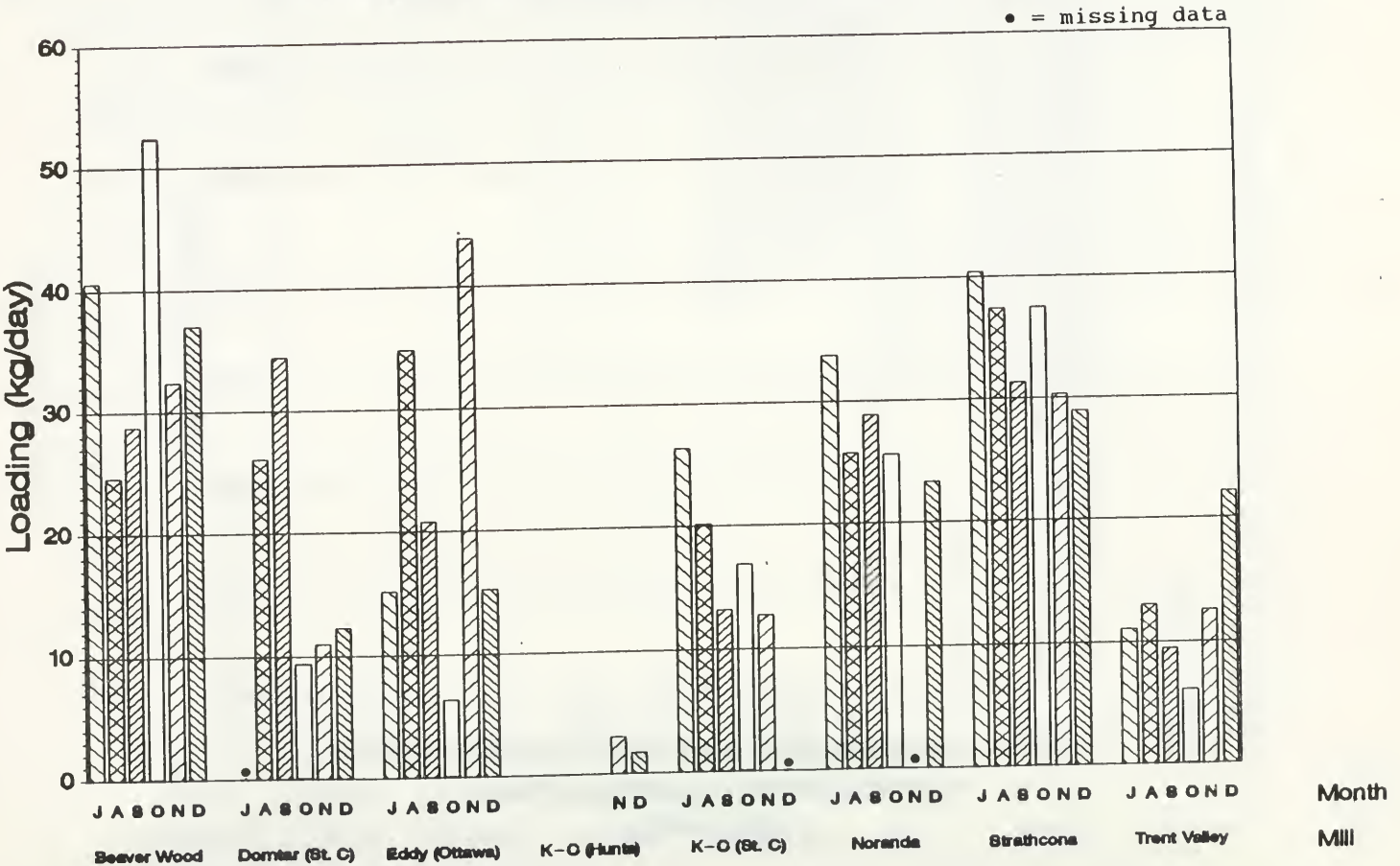


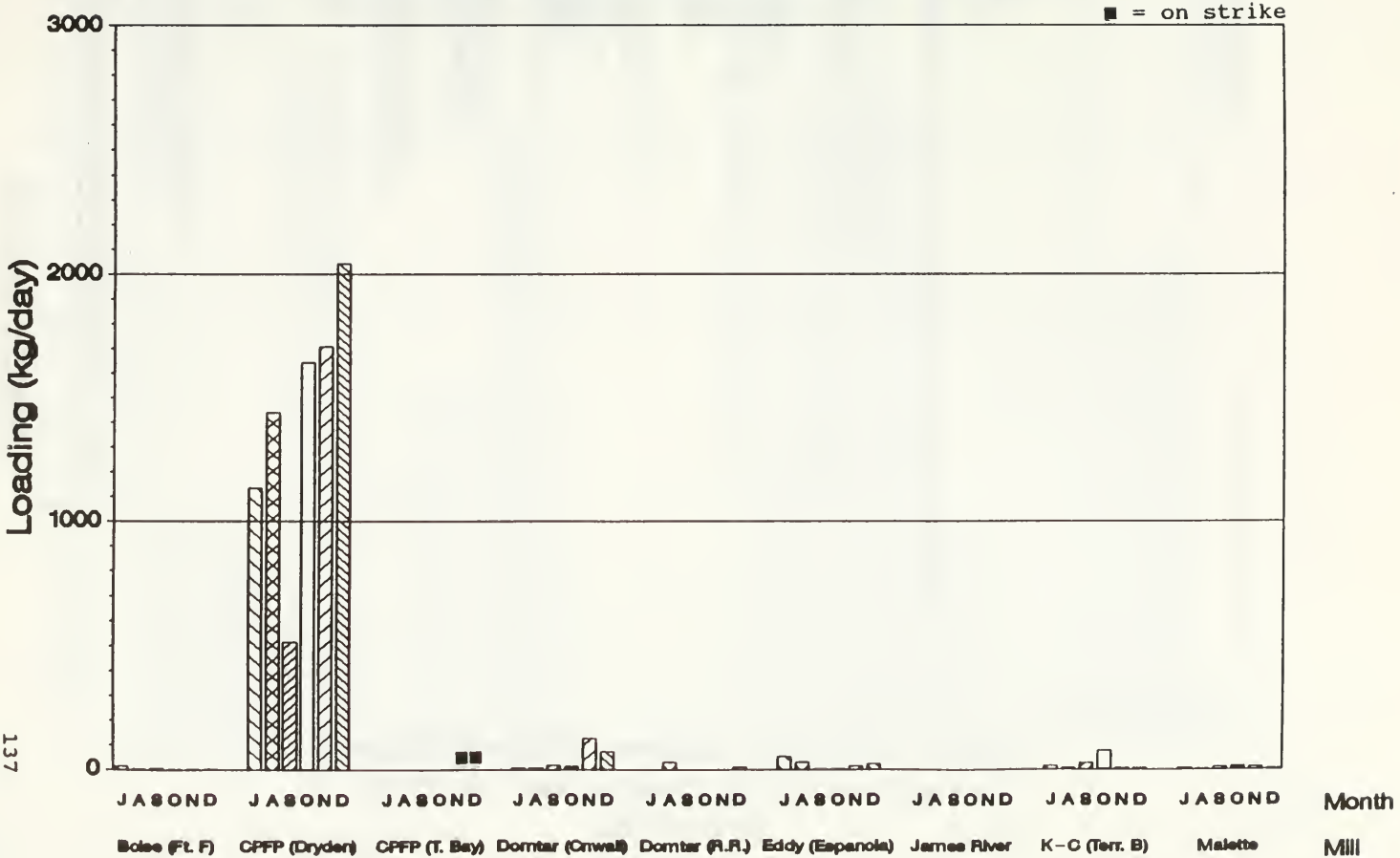
Figure 2.35
Corrugating Mill Process Effluent
Monthly Average Loading of Total Kjeldahl Nitrogen



# Figure 2.36
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of Total Kjeldahl Nitrogen



# Figure 2.37
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Loading of Nitrate and Nitrite



# Figure 2.38
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Nitrate and Nitrite

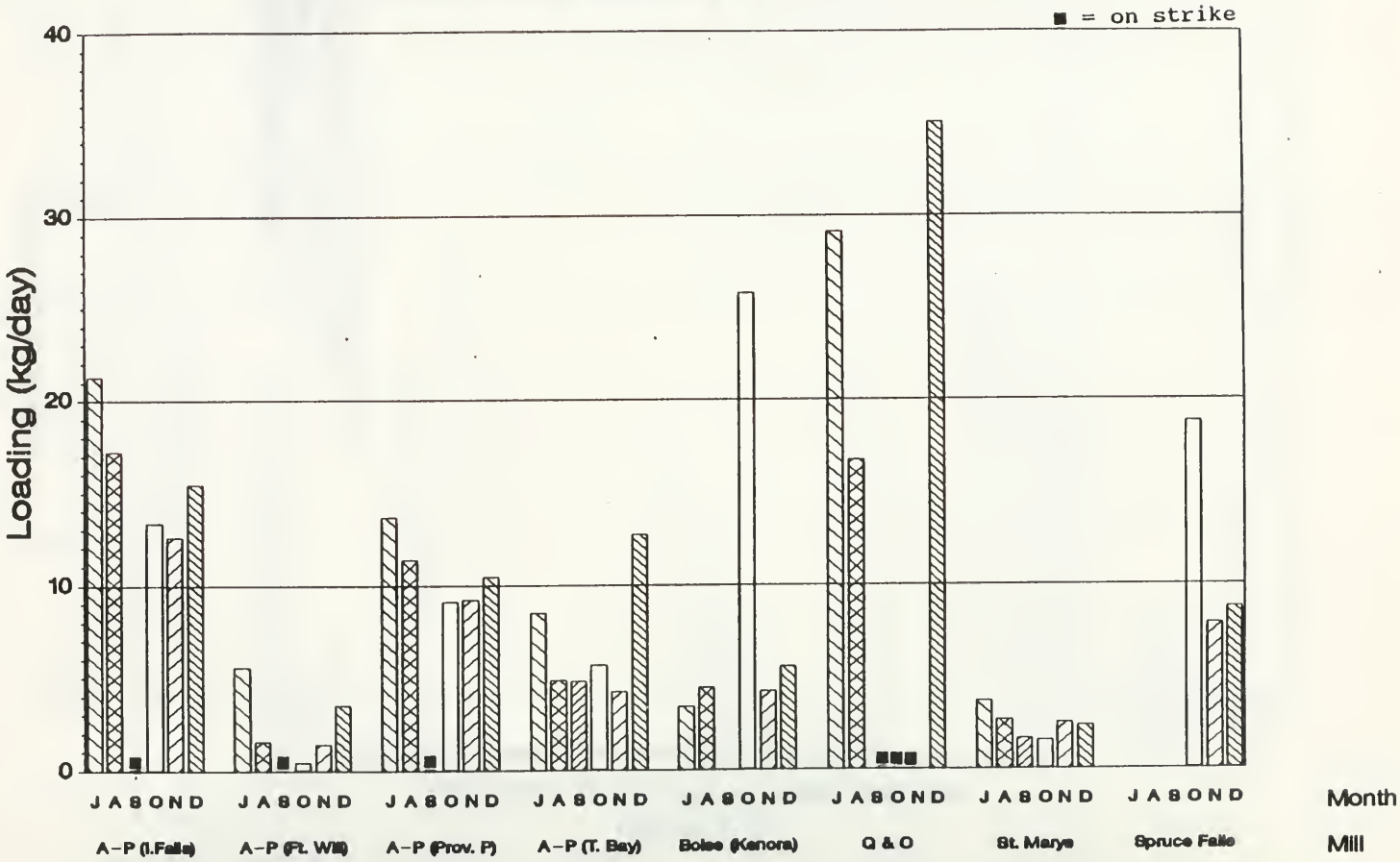
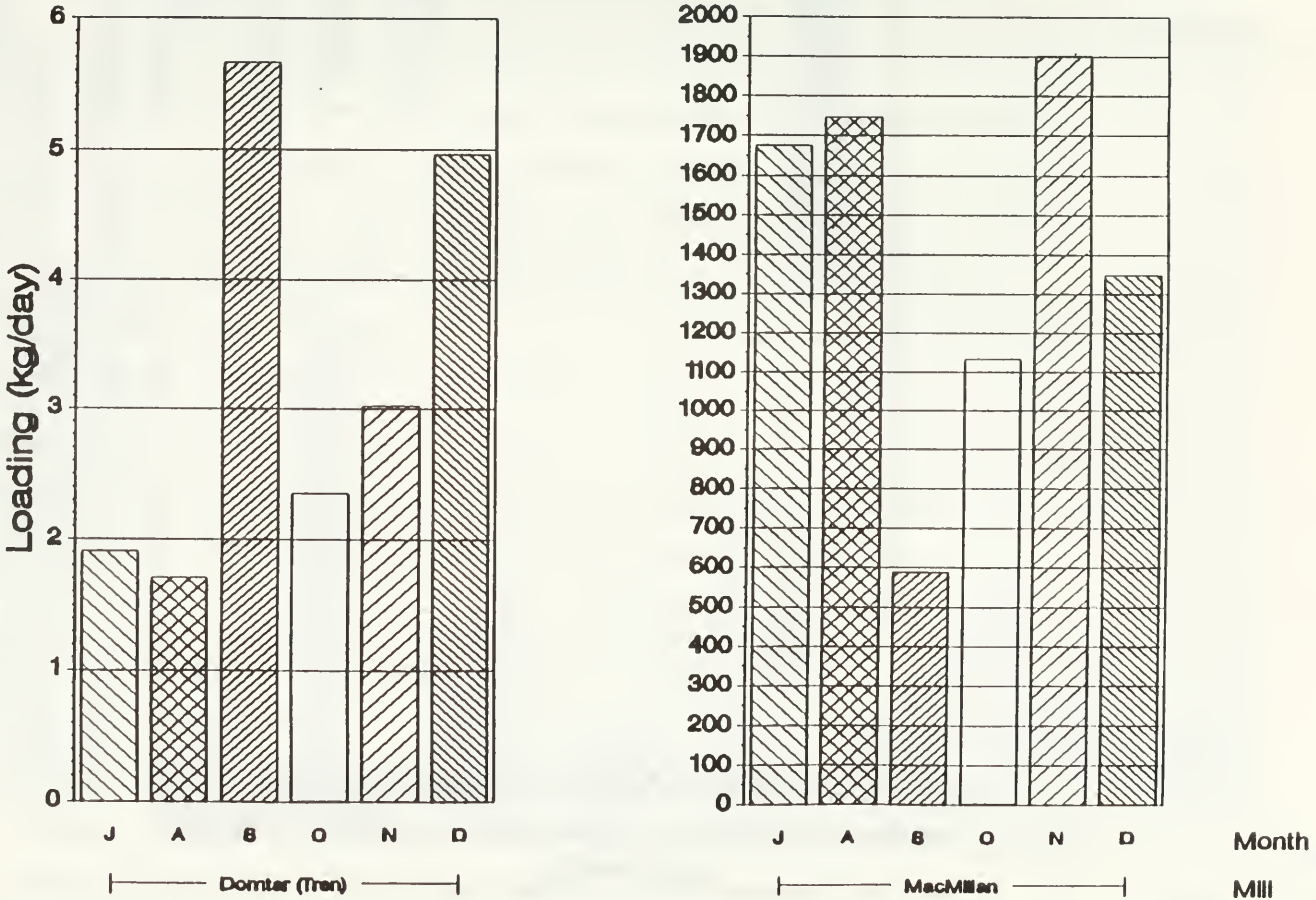
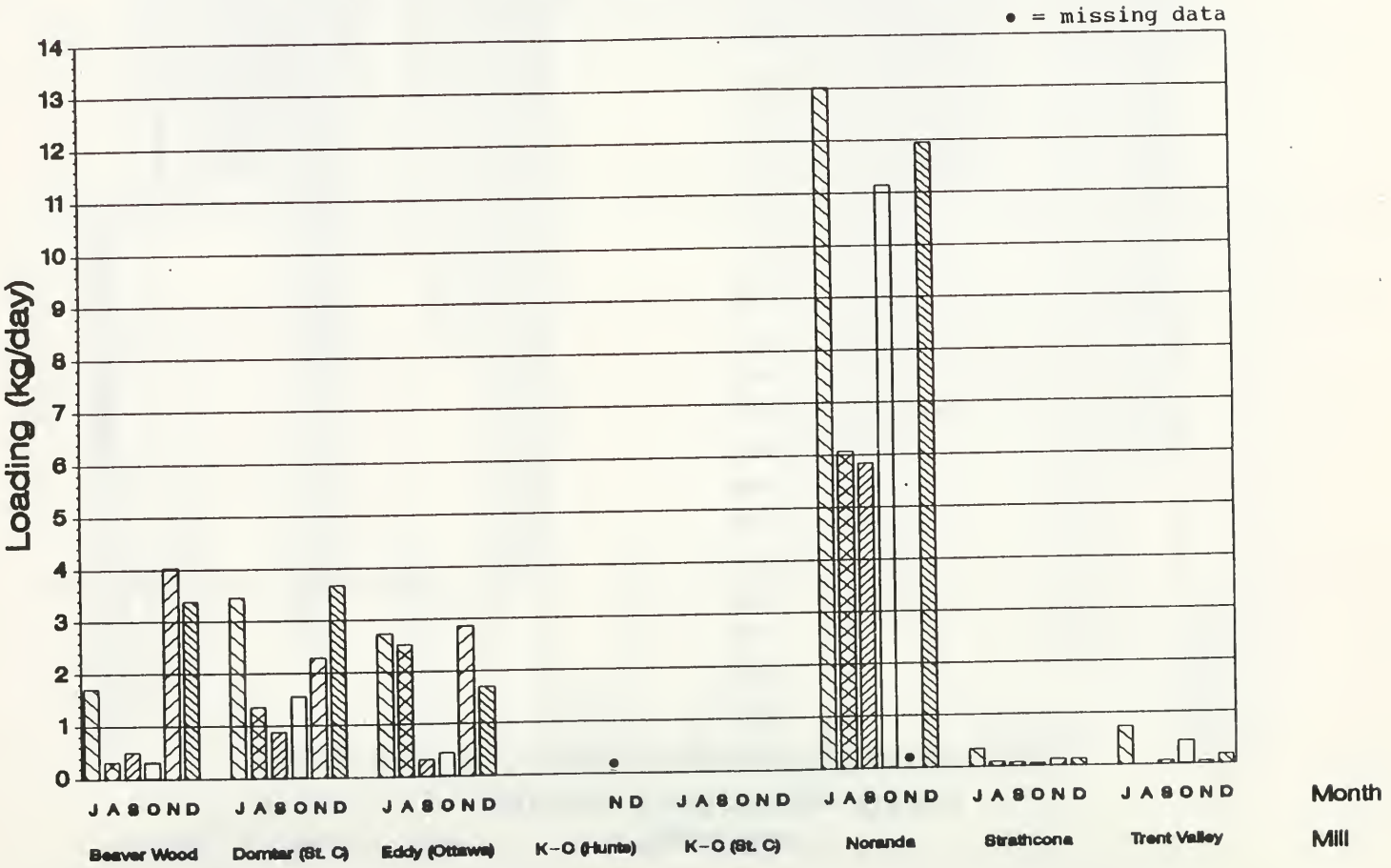


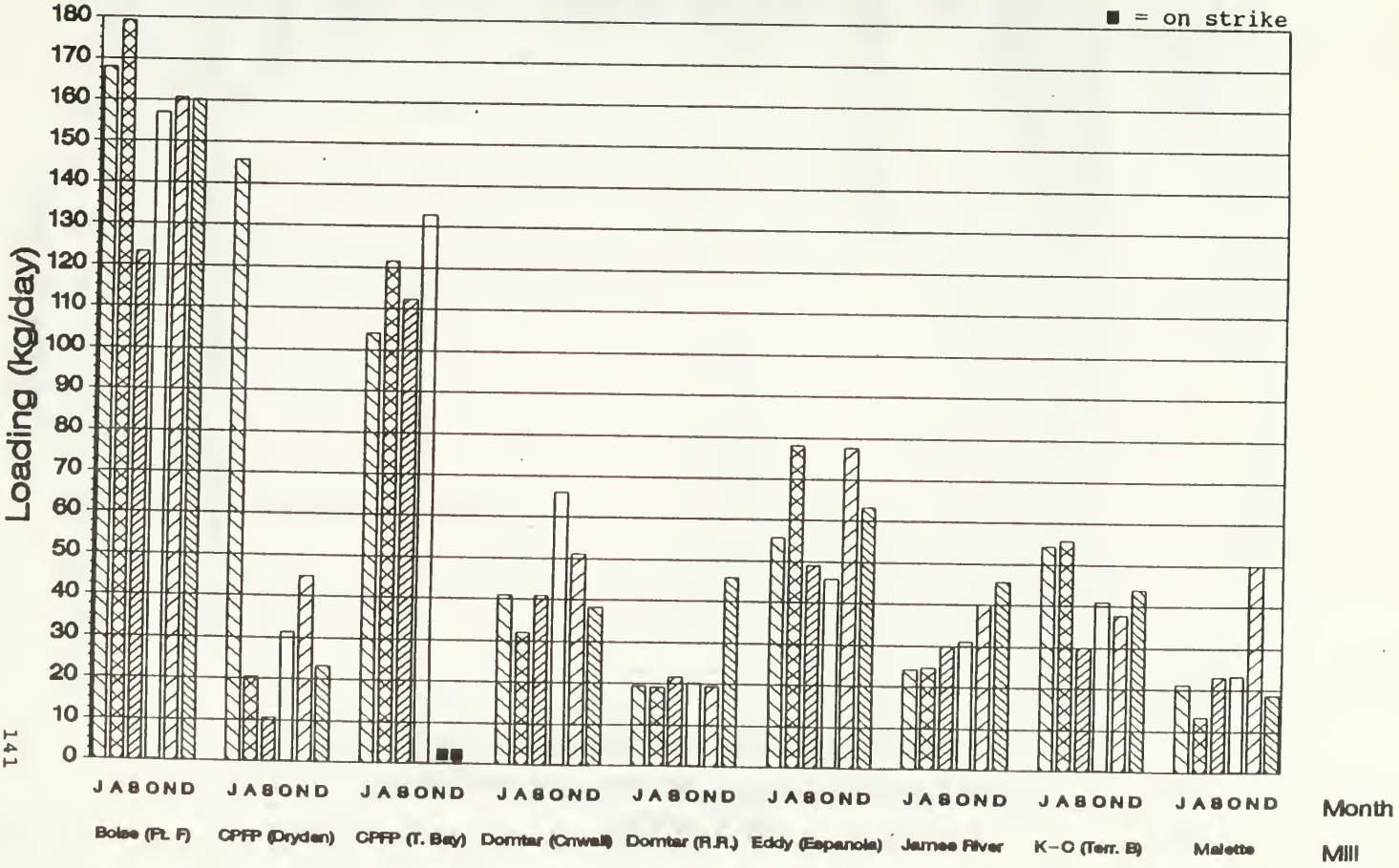
Figure 2.39
Corrugating Mill Process Effluent
Monthly Average Loading of Nitrate and Nitrite



# Figure 2.40
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of Nitrate and Nitrite



# Figure 2.41
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Loading of Phosphorus



# Figure 2.42
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Loading of Phosphorus

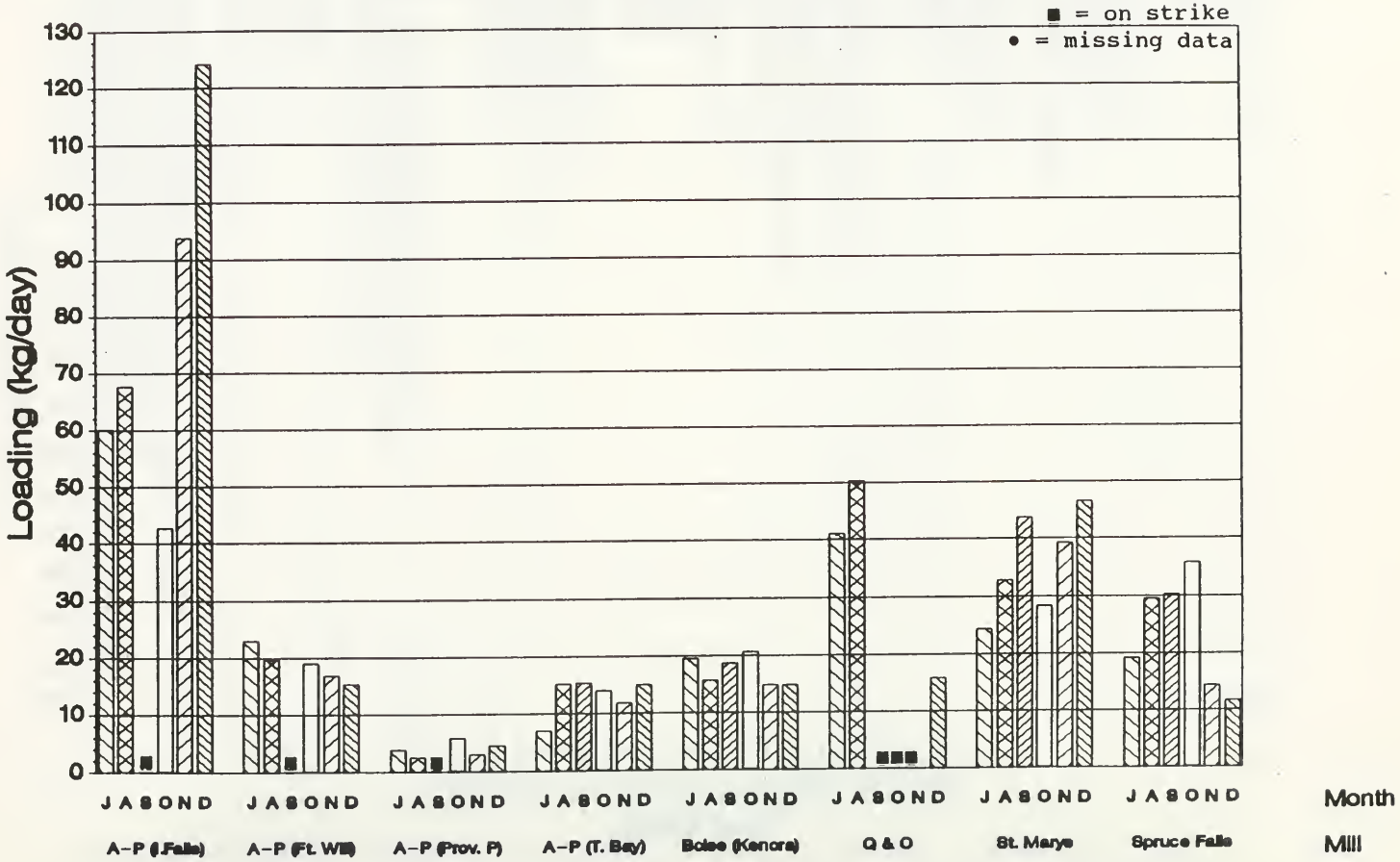
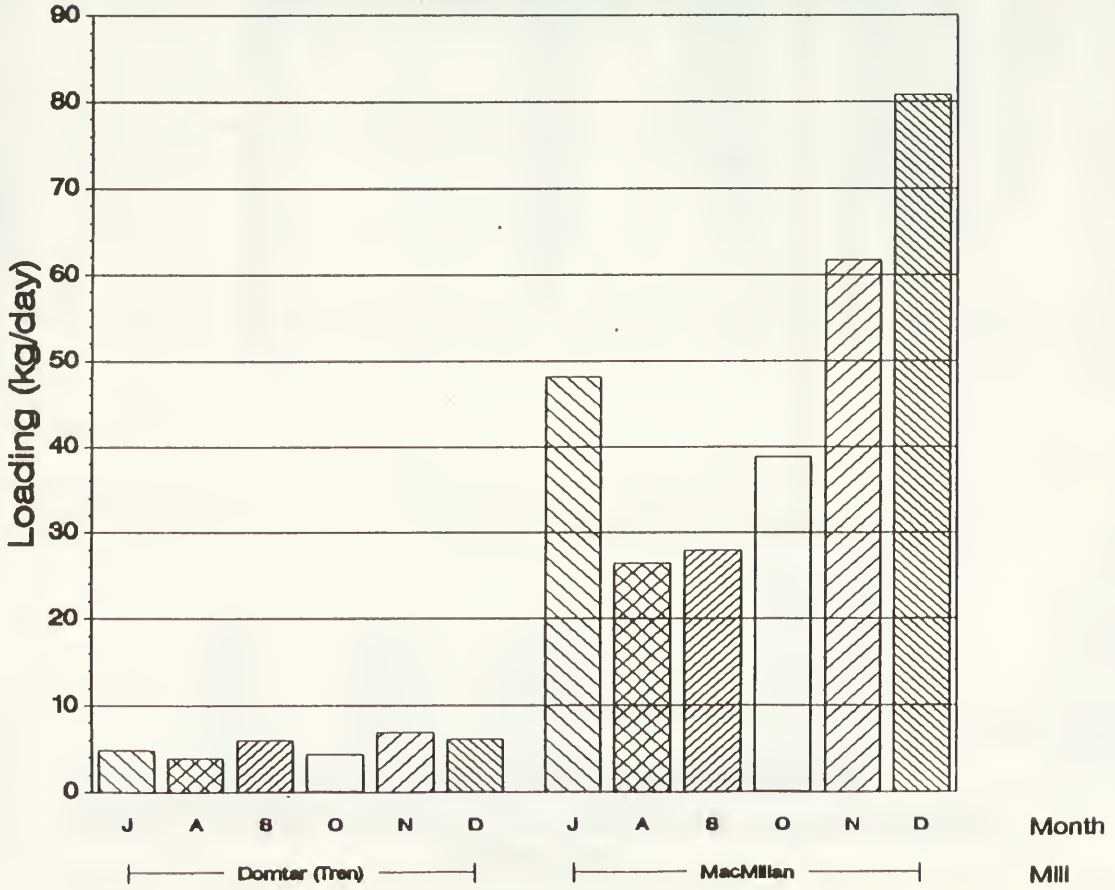
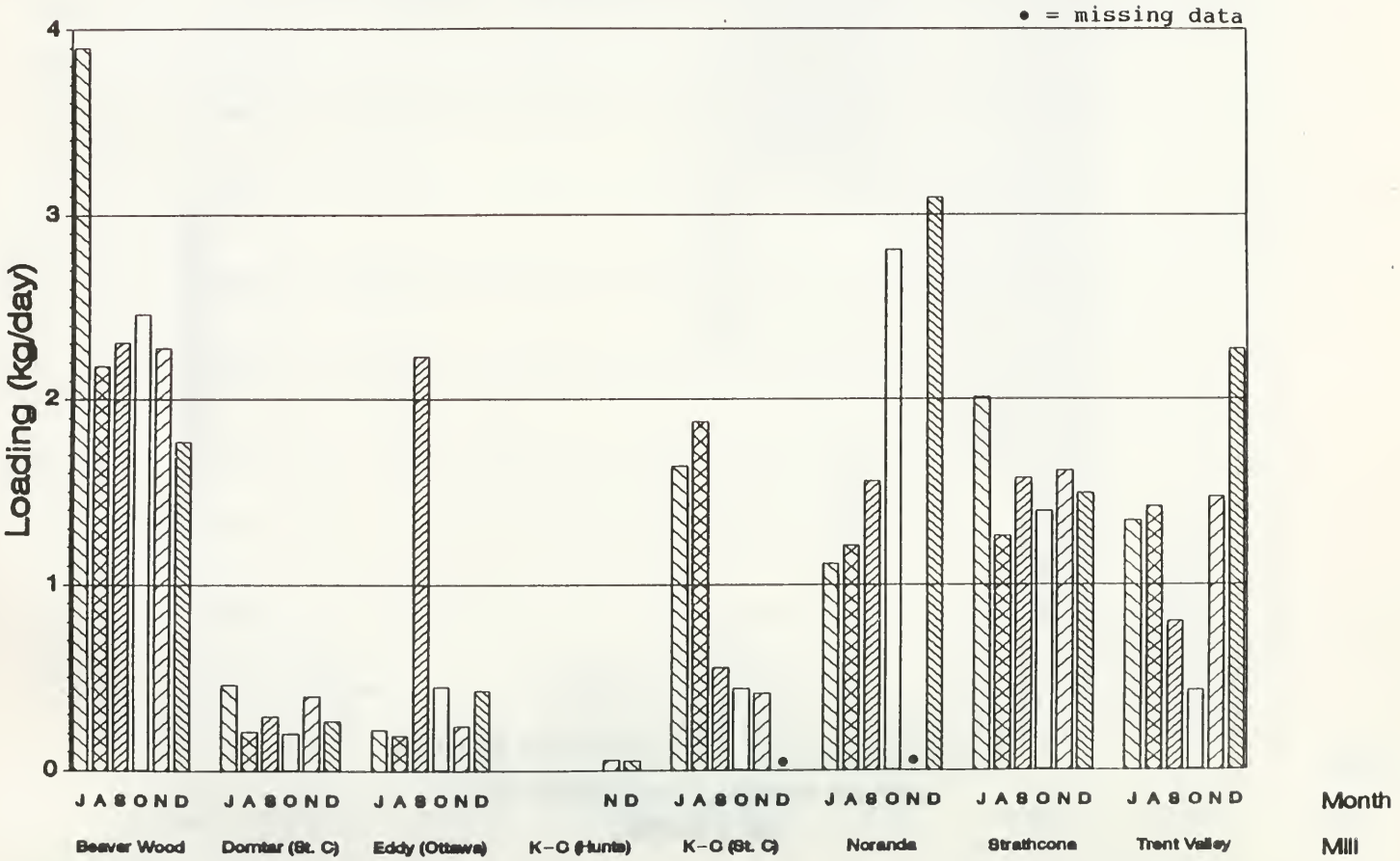


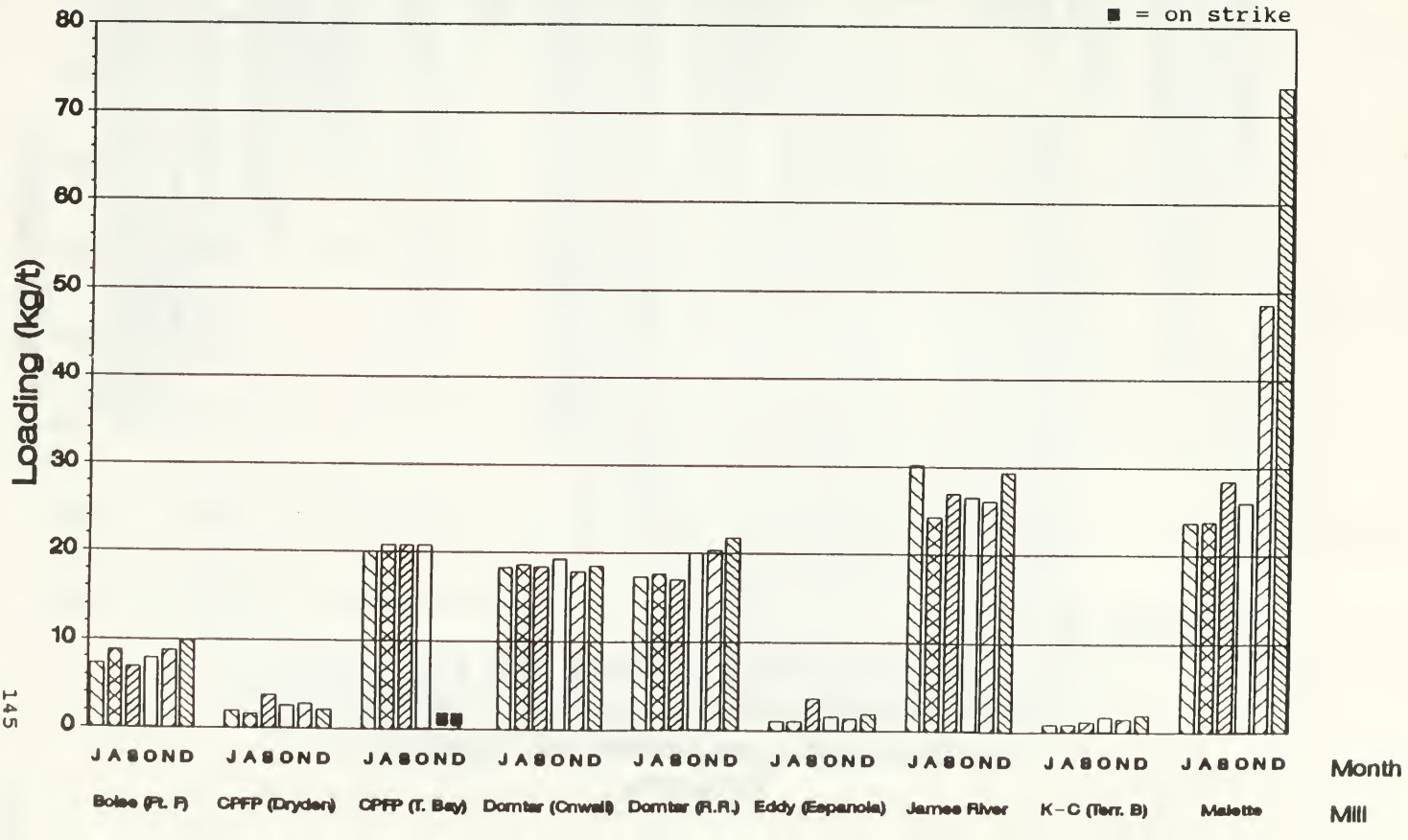
Figure 2.43
Corrugating Mill Process Effluent
Monthly Average Loading of Phosphorus



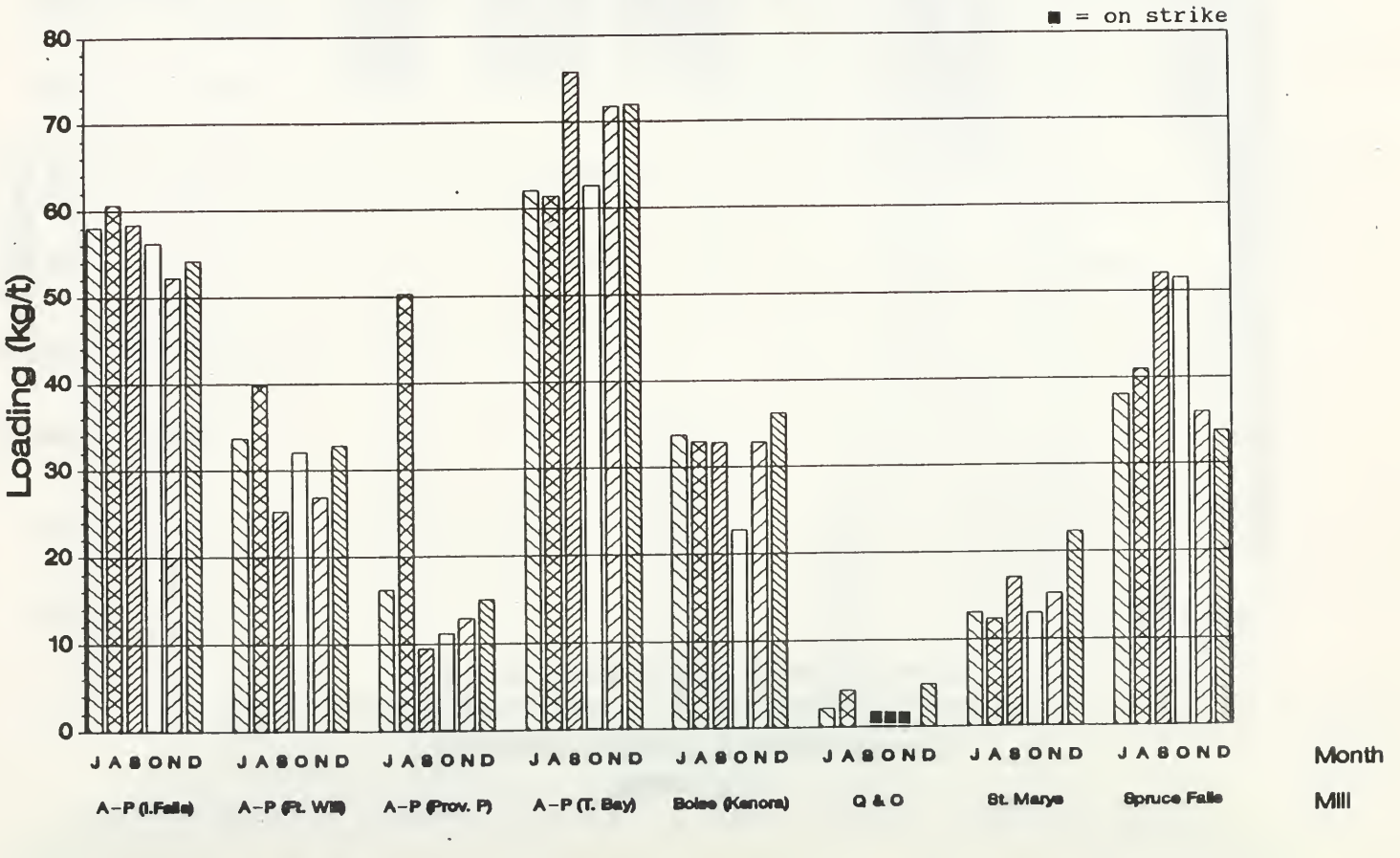
# Figure 2.44
## Deinking – Board – Fine Papers – Tissue Mill Process Effluent
## Monthly Average Loading of Phosphorus



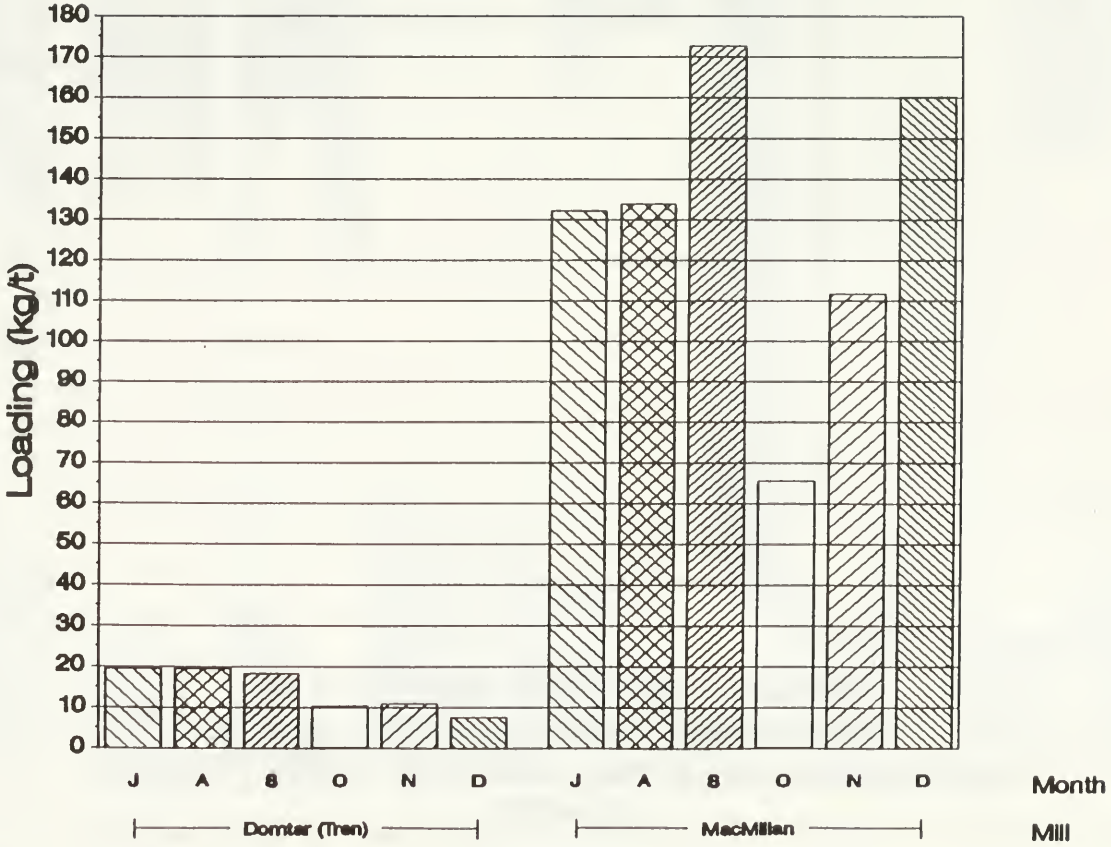
# Figure 3.1
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Production Based Loading
## of 5-Day Biological Oxygen Demand



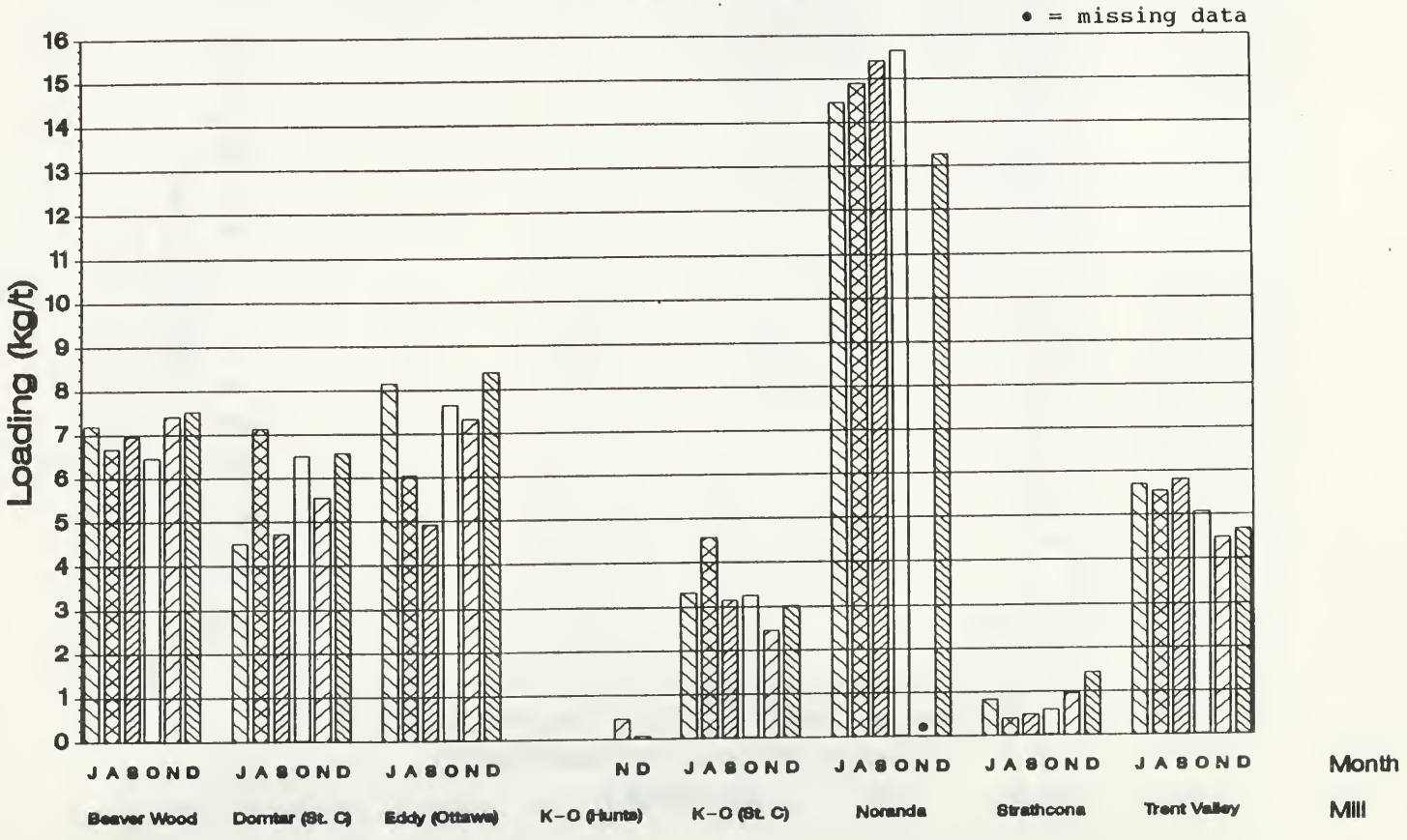
# Figure 3.2
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Production Based Loading
## of 5 – Day Biological Oxygen Demand



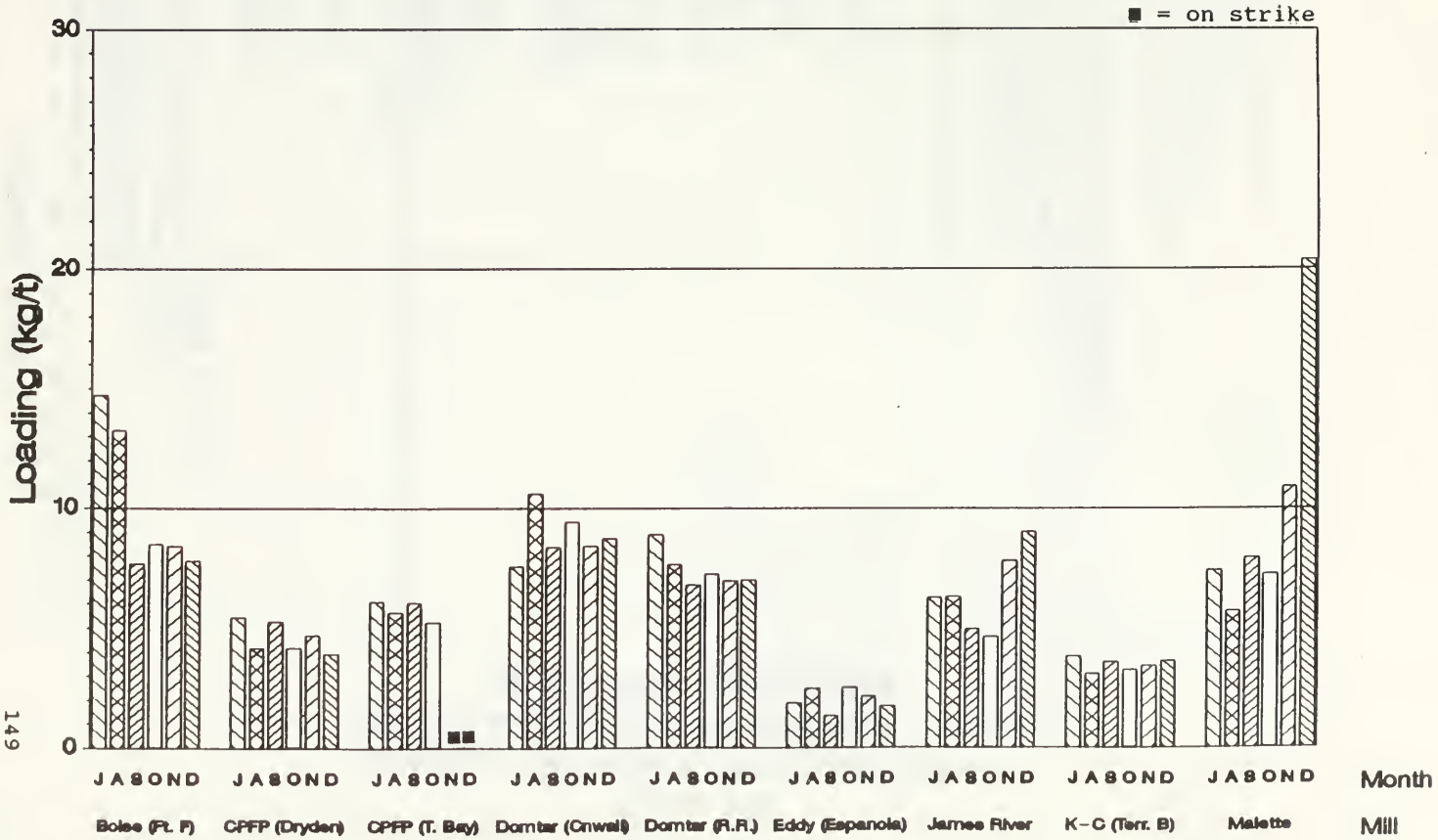
## Figure 3.3
## Corrugating Mill Process Effluent
## Monthly Average Production Based Loading
## of 5-Day Biological Oxygen Demand



# Figure 3.4
## Deinking – Board – Fine Paper – Tissue Mill Process Effluent
## Monthly Average Production Based Loading
## of 5 – Day Biological Oxygen Demand



## Figure 3.5
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Production Based Loading
## of Total Suspended Solids



# Figure 3.6
## Sulphite – Mechanical Mill Process Effluent
## Monthly Average Production Based Loading
## of Total Suspended Solids

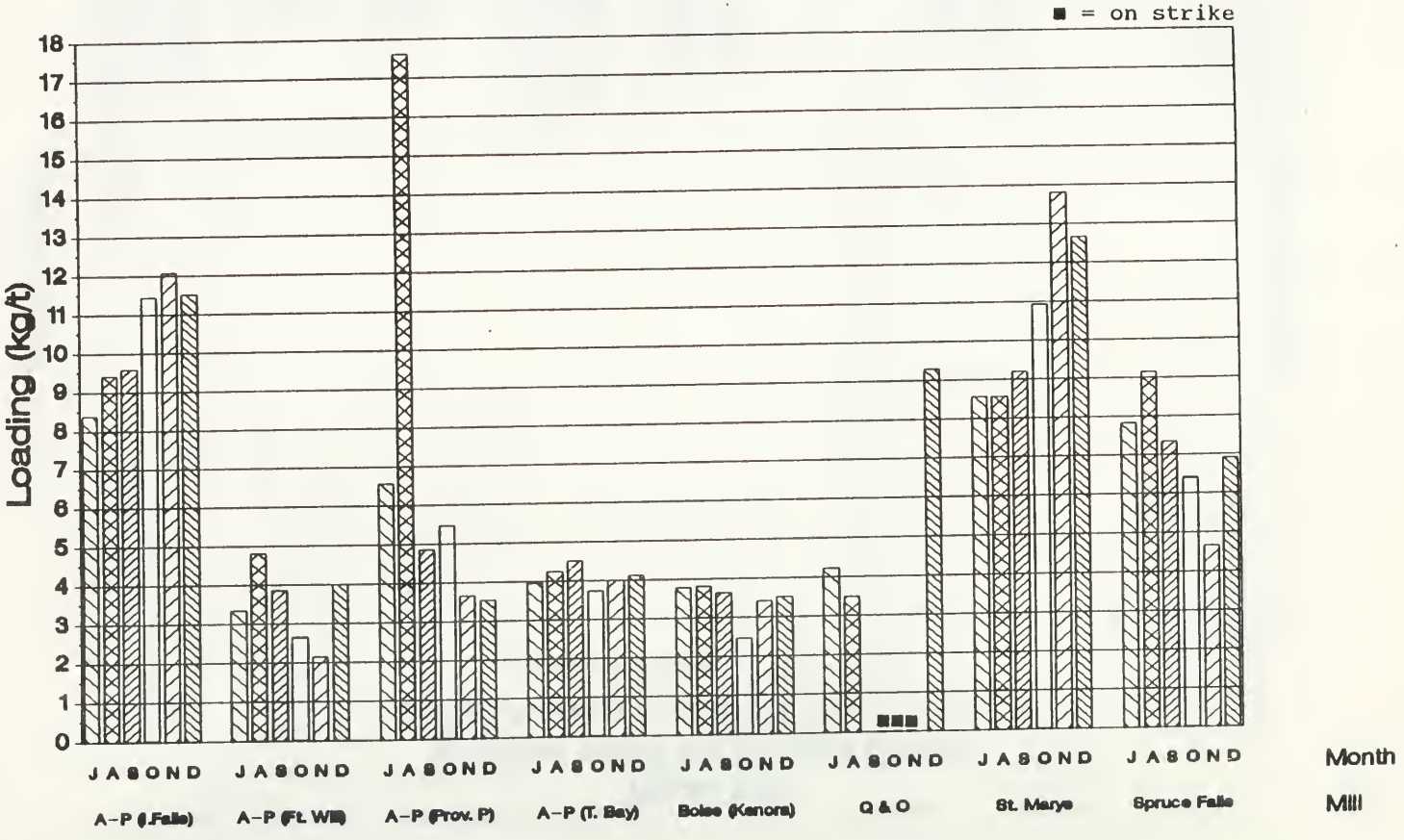
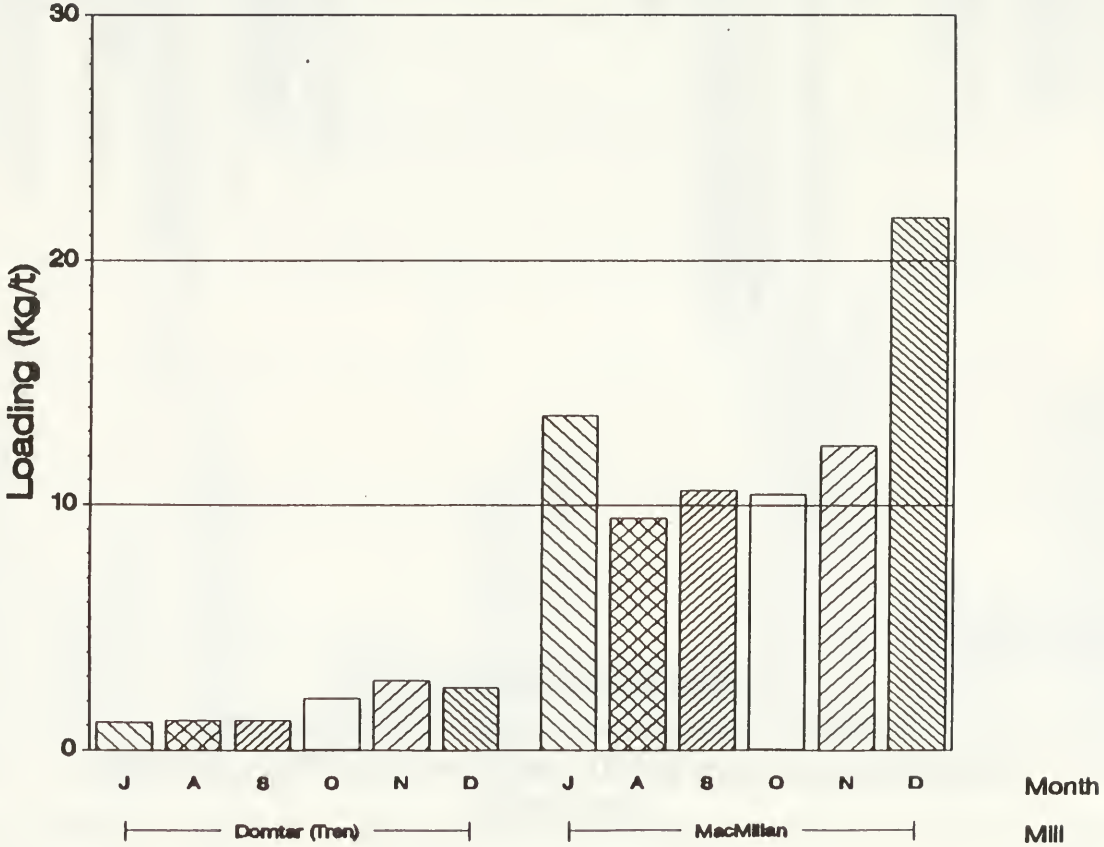
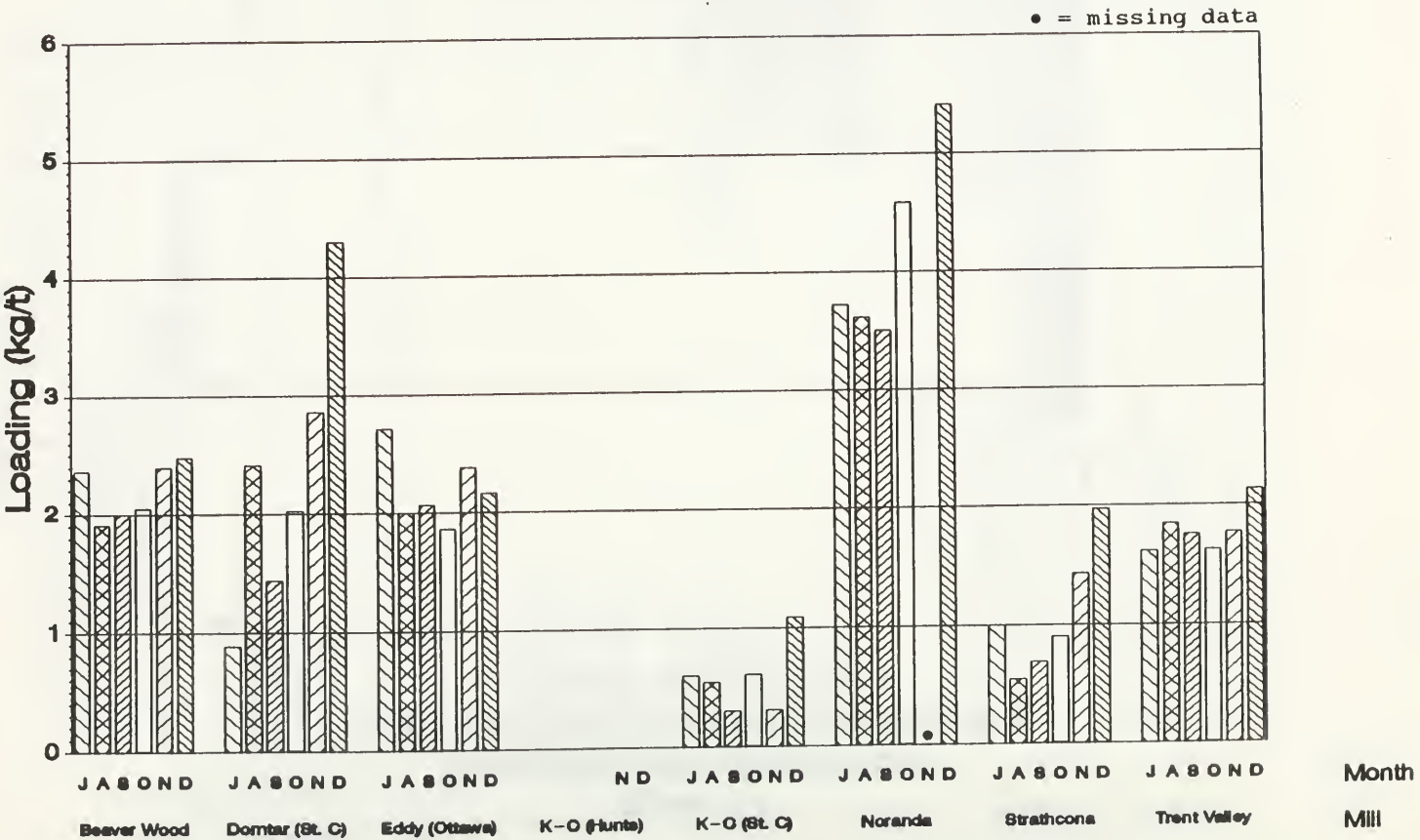


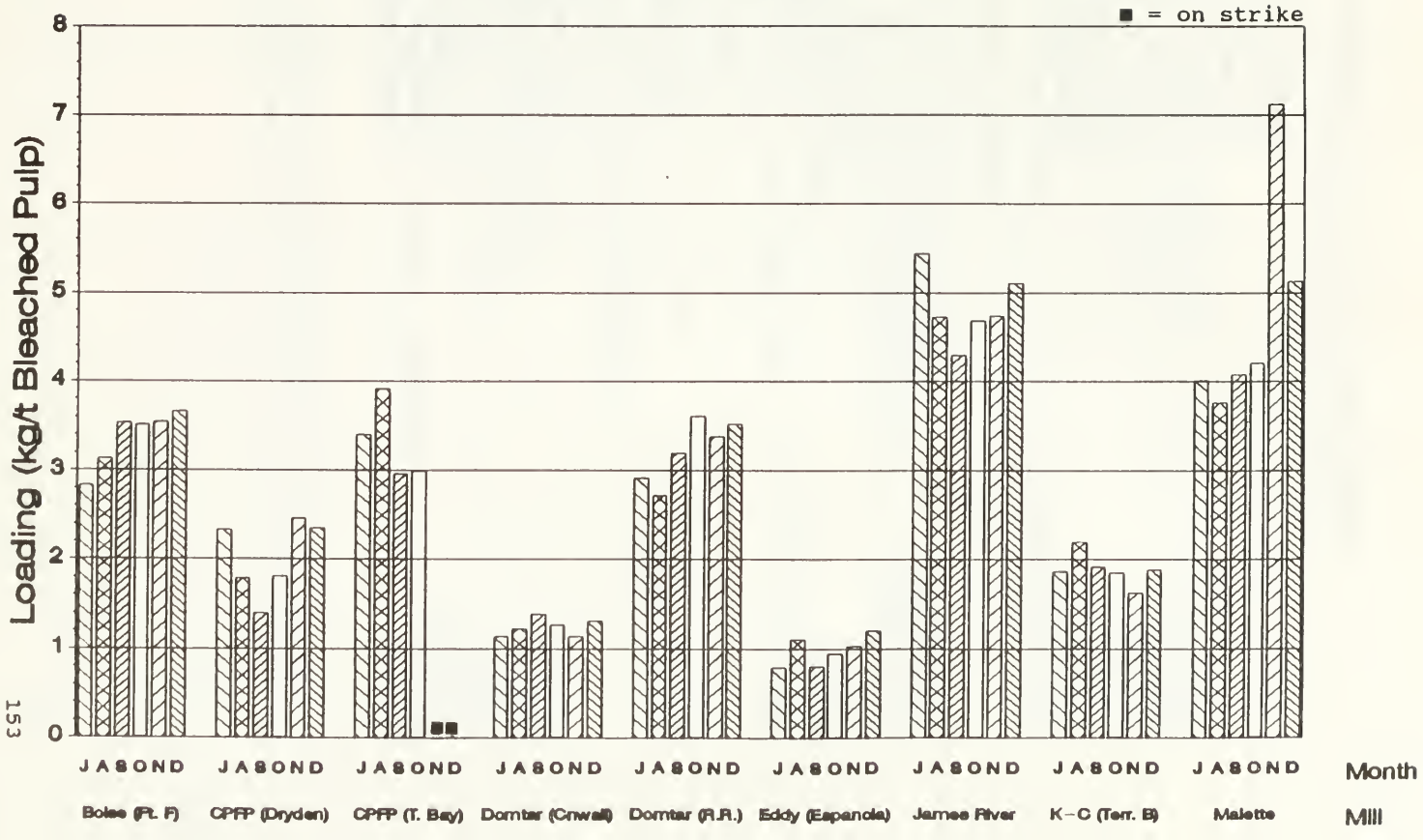
Figure 3.7
Corrugating Mill Process Effluent
Monthly Average Production Based Loading
of Total Suspended Solids



# Figure 3.8
## Deinking – Board – Fine Paper – Tissue Mill Process Effluent
## Monthly Average Production Based Loading
## of Total Suspended Solids



## Figure 3.9
## Sulphate (Kraft) Mill Process Effluent
## Monthly Average Production Based Loading
## of Adsorbable Organic Halide



## APPENDIX A - MISA PULP AND PAPER SECTOR

SULPHATE (KRAFT) CATEGORY

| | |
|---|---|
| **Boise Cascade Canada Ltd.** | Fort Frances |
| **Canadian Pacific Forest Products Ltd.** | Dryden |
| **Canadian Pacific Forest Products Ltd.** | Thunder Bay |
| **Domtar Inc.**, Fine Papers Division | Cornwall |
| **Domtar Inc.**, Containerboard Division | Red Rock |
| **E.B. Eddy Forest Products Ltd.** | Espanola |
| **James River-Marathon Ltd.** | Marathon |
| **Kimberly-Clark Canada Inc.** | Terrace Bay |
| **Malette Kraft Pulp and Power Co.** | Smooth Rock Falls |

SULPHITE-MECHANICAL CATEGORY

| | |
|---|---|
| **Abitibi-Price Inc.**, Thunder Bay Division | Thunder Bay |
| **Abitibi-Price Inc.**, Fort William Division | Thunder Bay |
| **Abitibi-Price Inc.**, Provincial Papers Division | Thunder Bay |
| **Abitibi-Price Inc.**, Iroquois Falls Division | Iroquois Falls |
| **Boise Cascade Canada Ltd.** | Kenora |
| **Quebec & Ontario Paper Company Ltd.** | Thorold |
| **St. Marys Paper Inc.** | Sault Ste. Marie |
| **Spruce Falls Power and Paper Company Ltd.** | Kapuskasing |

CORRUGATING CATEGORY

| | |
|---|---|
| **Domtar Inc.**, Containerboard Division | Trenton |
| **MacMillan Bloedel Ltd.** | Sturgeon Falls |

DEINKING-BOARD-FINE PAPERS-TISSUE CATEGORY

| | |
|---|---|
| **Beaver Wood Fibre Company Ltd.** | Thorold |
| **Domtar Inc.**, Fine Papers Division | St. Catharines |
| **E.B. Eddy Forest Products Ltd.** | Ottawa |
| **Noranda Forest Inc.**, Recycled Papers | Thorold |
| **Kimberly-Clark Canada Inc.** | St. Catharines |
| **Kimberly-Clark Canada Inc.** | Huntsville |
| Trent Valley, **Paperboard Industries Corporation** | Trenton |
| **Strathcona Paper Company** | Napanee |

* N.B.: List taken from The Development Document for the Effluent Monitoring Regulation for the Pulp and Paper Sector

## APPENDIX B - REMARK CODES

| REMARK CODE (PREMK) | DESCRIPTION |
|---|---|
| < | Actual amount less than reported |
| > | Actual amount probably greater than reported |
| A | Approximate value |
| <DL | Reported value = MDL: measured amt. MDL (non-zero) |
| <T | A measurable trace amount: interpret with caution |
| <W | No measurable response (zero): reported value |
| <WE | No measurable response (diln/concn): reported value |
| AR | Attached report |
| I | Interference suspected |
| IC | Interferenc: colour |
| IM | Interference: Sample Matrix |
| N/A (or !) | No data will be reported: see textual report |
| OLD | Old: sample exceeds maximum storage time |
| UQC | Data unreliable: possible lab QC problem(s) |
| !IN | No data: insufficient volume due to inspection |
| !NM | No effluent - no sample available |
| UCR | Data unreliable: could not confirm by reanalysis |

## APPENDIX C - UNITS OF MEASUREMENT

1 ng/L is approximately equal to 1 ppt (part per trillion)

1 ug/L is approximately equal to 1 ppb (part per billion)

1 mg/L is approximately equal to 1 ppm (part per million)

1 usiem/m = 10 umhos/cm